

Third Quarter, 1984

ARIZONA --- BUSINESS



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Report to the Reader

This issue of *Arizona Business* offers a sampling of the special and continuing research projects engaged in by the Bureau of Business and Economic Research in the College of Business at ASU. We feature two special projects in major feature articles: "The 1983-84 Economic Impact of Arizona State University" and "Housing Appreciation in the Phoenix Metropolitan Area."

The former article reports on a study of how tax dollars that support the university flow back into the local community. It reveals that expenditures by ASU, its faculty, staff and students totalled \$525.9 million during fiscal 1983-84. The second major feature analyzes Phoenix area housing appreciation, using a measure recently developed by the Bureau. During the 1981-83 period, the median rate of appreciation was slightly more than 3 percent per year.

Reports on the Bureau's ongoing research projects include a commentary by Jay Q. Butler, Director of the Arizona Real Estate Institute, on Arizona construction activity during the second quarter. Three tables provide building permit, new housing start, and real estate sales data. In addition, Tom R. Rex, Bureau Manager of Research Support, analyzes the demographics of metropolitan centers in the Southwest and reports on the first quarter data from the Bureau's new Arizona Gross State Product model. He also reviews second quarter consumer price index data for metropolitan Phoenix, which reveal a 5.6 percent increase in the prices of goods and services over second quarter, 1983.

We round out this issue of *Arizona Business* with Harold Fearon's "Survey of Arizona Business Conditions" and an article that examines the impact of the U.S. Export Trading Company Act of 1982 on U.S. exporting efforts.

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The 1983-84 Economic Impact of Arizona State University

TIMOTHY D. HOGAN
LEE R. McPHETERS

Arizona State University impacts the residents of Arizona in far-reaching and complex ways. The intangible impacts revolve around the university's essential missions of teaching, research, and service. Though not easily measured in the short run, they improve the quality of life for individuals and strengthen society's commerce and culture.

The tangible impacts of the university are more easily quantified: the number of students enrolled, number of degrees awarded, the size of the university's budget, and the economic activity its presence creates. This article reports on a recent study of the economic impact of expenditures by Arizona State University and its fac-

ulty, staff and students. The objective is to provide information for citizens who support the university by tracing the flow of their tax dollars back into the community.

RESEARCH DESIGN

The time period of the study is the university's fiscal year from July 1, 1983, through June 30, 1984. Data on faculty, staff and student expenditures were obtained during spring, 1984, by mailing questionnaires to 300 randomly selected faculty and staff and 4,000 students. Respondents provided expenditure information on housing costs, clothing outlays, grocery bills, transportation expenses, savings, charitable contributions, insurance, and other budget components.

These expenditure figures were combined with information obtained from ASU financial records on institutional spending for supplies, operations, services, and construction for the 1983-84 fiscal year. Institutional expenditures were restricted to those made to Arizona businesses.

Study methodology was developed by the American Council on Education and is described in the publication, *Estimating the Impact of a College or University on the Local Economy* (Washington, D.C.: American Council on Education, 1971). Thus, the results reported here are comparable both to those of similar studies undertaken at other major universities using the ACE method and to previous studies of the economic impact of ASU completed in 1971-72 and 1978-79.

The direct economic impact of Arizona State University for fiscal 1983-84 was an estimated \$525.9 million. This article provides a breakdown of expenditures by ASU, its faculty, staff and students and quantifies the university's employment impact.

Timothy D. Hogan and Lee R. McPheters are Professors of Economics in the ASU College of Business. Dr. McPheters is also Director of the College's Bureau of Business and Economic Research. Dr. Hogan is a Faculty Research Associate in the Bureau. The authors gratefully acknowledge the research contribution of Paul Umbriano, Graduate Research Assistant for the College of Business; the university offices that provided information for the study; and the funding assistance of the office of the ASU Vice President for Academic Affairs.

INSTITUTIONAL EXPENDITURES

During fiscal 1983-84, institutional expenditures by ASU for operations, supplies and construction contributed \$47.7 million to the local economy. This figure constitutes 9.1 percent of the university's total economic impact. As shown in Table 1, utilities accounted for the largest proportion of the operations budget (16.7 percent). Combined with telephone expenditures, \$10.3 million was funneled back into the economy. Spending on office and operating supplies totalled \$7.8 million (16.4 percent of the total).

TABLE 1
ASU INSTITUTIONAL EXPENDITURES FOR
SUPPLIES, SERVICES, EQUIPMENT
AND CONSTRUCTION
Fiscal 1983-84

Expenditure Category	Expenditures (000)	Percent of Total
Professional Services.....	\$ 5,910	12.4%
Office Supplies and Postage.....	2,139	4.5
Operating Supplies.....	5,700	11.9
Maintenance and Repairs.....	5,344	11.2
Telephone.....	2,366	5.0
Utilities.....	7,941	16.7
Printing, Photography.....	2,594	5.4
Rental Fees.....	1,967	4.1
Insurance.....	942	2.0
Food.....	1,007	2.1
Land and Improvements.....	1,396	2.9
Construction.....	10,398	21.8
TOTAL	\$ 47,704	100.0%

Note: Expenditures listed are restricted to those made to Arizona businesses. Excluded are items such as travel, library acquisitions and major equipment.

Source: Office of the Comptroller, Arizona State University.

Since its transition from Arizona State College in 1958, Arizona State University has experienced a steady enrollment growth that has generated a continuing need for expanded physical facilities. The university responded to this need with a carefully planned, long-range program for construction of new buildings and renovation of existing structures. During fiscal 1983-84, the university spent \$10.4 million on construction, accounting for 21.8 percent of its in-state institutional expenditures. Maintenance and repairs on existing ASU buildings generated another \$5.3 million for the local economy.

EXPENDITURES BY ASU FACULTY,
STAFF AND STUDENTS

Direct expenditures by the university's faculty, staff, and students exceeded \$478 million during fiscal 1983-84. Table 2 provides a 15-category expenditure breakdown.

Student expenditures accounted for a major portion (67.9 percent) of the total direct economic impact of the university (Figure 1). The \$357 million magnitude of their spending is explained by the group's large size (more than seven times larger than faculty and staff) as well as by the fact that many students simultaneously hold down part-time or full-time jobs or have an employed spouse who helps provide family income.

Spending by ASU faculty and staff made up an additional 23 percent of the university's 1983-84 impact on the local economy. Of the \$121.2 million total, faculty contributed \$54.1 million and staff provided \$67.1 million (Table 2). Disposable income for faculty and staff is shown in Table 3. From their \$117.9 million payroll, deductions of \$49.9 million were subtracted, yielding \$68.6 million of spendable income.

FIGURE 1
DIRECT EXPENDITURES IN ARIZONA
Fiscal 1983-84

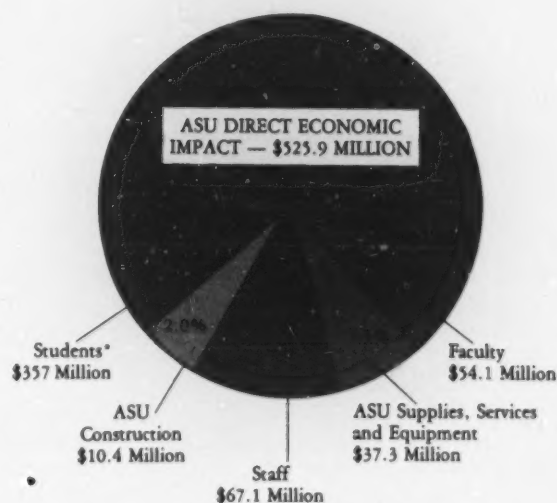


*Figure is for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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TABLE 2
DIRECT EXPENDITURES BY ASU FACULTY, STAFF AND STUDENTS
Fiscal 1983-84

Expenditure Category	Faculty (000)	Percent	Staff (000)	Percent	Students* (000)	Percent	Total (000)	Percent
Groceries	\$ 6,968	10.8%	\$ 9,273	14.4%	\$ 48,275	74.8%	\$ 64,516	100.0%
Clothing	2,144	10.5	2,581	12.6	15,717	76.9	20,442	100.0
Housing	12,405	12.2	16,709	16.5	72,225	71.3	101,338	100.0
Telephone	1,404	8.5	1,618	9.8	13,472	81.7	16,494	100.0
Utilities	3,369	9.0	5,030	13.4	29,189	77.7	37,589	100.0
Auto Payments	2,578	9.3	4,243	15.3	20,956	75.4	27,777	100.0
Auto Operations	2,884	7.9	4,330	11.9	29,189	80.2	36,404	100.0
Food Away from Home	3,037	11.2	3,018	11.2	20,956	77.6	27,012	100.0
Recreation	1,736	9.5	1,881	10.3	14,595	80.1	18,211	100.0
Insurance	3,165	9.6	3,849	11.7	25,821	78.6	32,835	100.0
Personal/Business Services	1,889	11.9	2,406	15.1	11,601	73.0	15,895	100.0
Medical Services	1,123	8.4	1,750	13.1	10,478	78.5	13,351	100.0
Other Retail Items	2,042	11.5	2,231	12.6	13,472	75.9	17,745	100.0
Savings	7,581	19.8	6,299	16.5	24,324	63.7	38,204	100.0
Charities	1,761	17.0	1,881	18.1	6,736	64.9	10,378	100.0
TOTAL	\$54,085	11.3%	\$67,097	14.0%	\$357,008	74.7%	\$478,191	100.0%

*Figures are for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

When student expenditures are combined with faculty and staff spending, the result is a weekly injection into the local economy of about \$12 million during the academic year. The overall effect is a strong, continuing demand for the goods and services provided by Arizona business firms. The largest expenditure categories are housing, groceries, savings allocations, and vehicle operations, but expenditures on utilities, food away from home, insurance, and clothing are also sizable.

MONTHLY BUDGET PROFILES

The monthly expenditures reported by survey respondents are related in Table 4. Faculty spent the most on a monthly basis (\$2,242), followed by staff (\$1,623), then by students (\$1,062). Figures 2, 3 and 4 illustrate the proportion of each group's total budget that was devoted to each of the 15 expenditure categories. Housing and housing-related expenses (rent, mortgage payments, telephone and utilities) constituted the largest budget item for all three groups.

On a proportional basis, faculty, staff and student expenditures were very similar for food (including groceries and food away from home), clothing, and personal expenses (including business and personal services, recreation and medical services). However, transportation expenditures (vehicle payments, repairs and fuel) were a larger share of the budget for students (22.9 percent) than for faculty (15 percent) or staff (17.6 percent). Faculty savings (13.2 percent) exceeded staff savings (8.9 percent) and was more than double the proportion of budget saved by students (6.0 percent).

Insight into the effects of price inflation during the latter part of the 1970s is provided by a comparison of budget figures from the 1983-84 impact study with those of the 1977-78 study. For the previous study, corresponding total monthly expenditures for faculty, staff and students were \$1,387, \$982, and \$609 respectively. The 1983-84 budgets were 62 percent greater for faculty, 65 percent greater for staff, and 74 percent greater for students.

TABLE 3
DISPOSABLE INCOME OF
ASU FACULTY AND STAFF
Fiscal 1983-84

1983-84 Faculty and Staff Payroll	\$117,980,846
Less: Federal Income Taxes Withheld	15,549,880
State Income Taxes Withheld	3,376,272
Social Security (employee contribution only)	13,251,299
Arizona State Retirement System (employee contribution only)	6,975,406
Health Insurance (employee contribution only)	6,340,801
Life Insurance	163,387
Auto Insurance	140,344
Annuities	4,007,826
Other Savings Plans	122,090
United Fund	35,932
Total Deductions:	\$ 49,963,237
Net: Faculty and Staff Income from ASU, Available for Expenditures	\$ 68,617,609

Source: Payroll Services, Personnel Office, Arizona State University.

TABLE 4
AVERAGE MONTHLY EXPENDITURES BY ASU
FACULTY, STAFF AND STUDENT HOUSEHOLDS
Fiscal 1983-84

Expenditure Category	Faculty	Staff	Students*
Groceries	\$ 273	\$ 212	\$ 128
Clothing	84	59	42
Housing	486	382	197
Telephone	55	37	35
Utilities	132	115	75
Auto Payments**	224	186	166
Auto Operations	113	99	77
Food Away from Home	119	69	58
Recreation	68	43	39
Insurance	124	88	69
Personal/Business Services	74	55	31
Medical Services	44	40	28
Other Retail Items	80	51	36
Savings	297	144	64
Charities	69	43	17
TOTAL	\$2,242	\$1,623	\$1,062

*Figures are for the nine-month 1983-84 academic year.

**Average payment for those reporting payments.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

For faculty, percentage increases in monthly expenditures between 1977-78 and 1983-84 were greatest for housing (59 percent), telephone (62 percent), food away from home (105 percent), personal and business services (100 percent), savings (87 percent), and charitable contributions (68 percent). For staff, the largest increases were seen in monthly spending for housing (80 percent), telephone (61 percent), auto operations (77 percent), personal and business services (103 percent), savings (80 percent), and charitable contributions (87 percent). Students experienced major expenditure increases for housing (53 percent), telephone (105 percent), and auto operations (64 percent).

The interpretation of students' monthly expenditures (Table 4) must be undertaken with care, recognizing the great diversity in spending patterns of this large group. Their expenditures for items such as groceries and housing may not be directly comparable to those by faculty and staff who are reporting data for a family unit. For example, many students who lived with parents or other relatives while attending the university reported very low or zero expenditures for certain items such as groceries, housing, and utilities, which tended to reduce the average value shown in the table.

MAJOR EXPENDITURES: HOUSING AND AUTOMOBILES

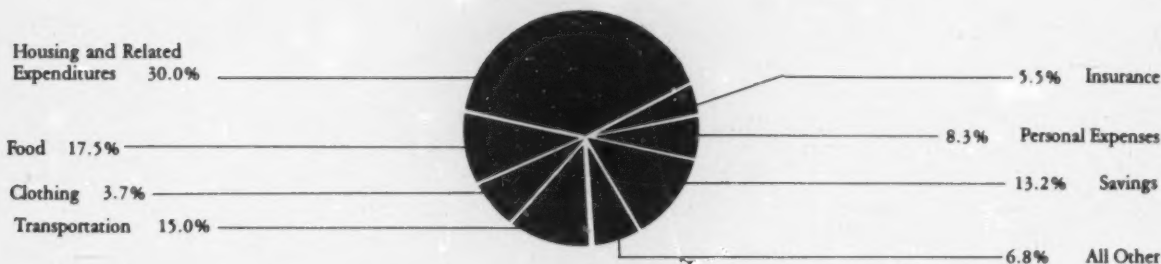
Faculty, staff and student expenditures for housing and automobiles were substantial in fiscal 1983-84. Table 5 reveals that new homes were purchased by 281 faculty members at an average price of \$86,571. Homes were purchased by 434 staff members at an average price of \$73,485 and by 2,059 students at the somewhat lower average price of \$61,867. The total impact of these expenditures on the housing market amounted to more than \$183 million. Similarly, faculty, staff and student purchases made a significant impact on the automobile market (Table 6). Nearly 12,000 automobiles were purchased by these groups during 1983-84, with total spending exceeding \$67 million.

DIRECT AND INDIRECT EMPLOYMENT IMPACT

The employment impact of the university is shown in Table 7. Overall, 17,786 jobs were created by the expenditures of the university and its faculty, staff and students. Faculty and staff employment positions totalled 5,772. Student spending created 4,896 jobs in

FIGURE II
ASU FACULTY EXPENDITURES AS A PERCENTAGE
OF MONTHLY FACULTY BUDGET

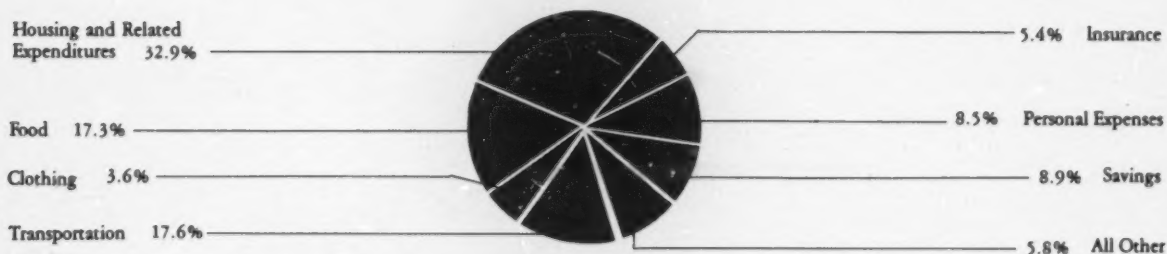
Fiscal 1983-84



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE III
ASU STAFF EXPENDITURES AS A PERCENTAGE
OF MONTHLY STAFF BUDGET

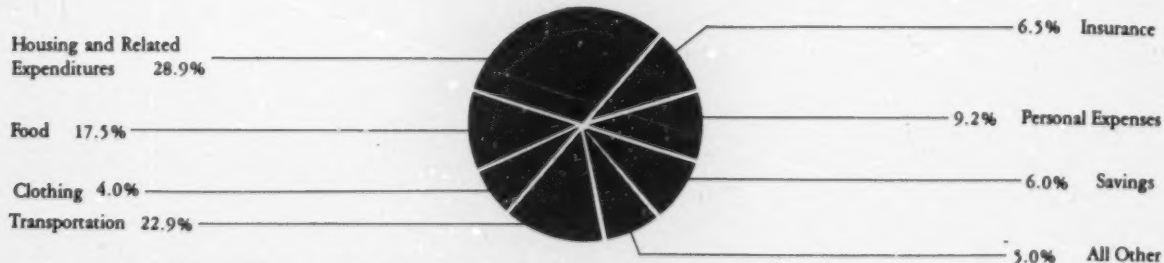
Fiscal 1983-84



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE IV
ASU STUDENT EXPENDITURES AS A PERCENTAGE
OF MONTHLY STUDENT BUDGET

Nine-Month 1983-84 Academic Year



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 5
HOUSING DEMAND BY ASU FACULTY,
STAFF AND STUDENTS
Fiscal 1983-84

	Number of Homes Purchased	Average Value	Total Expenditures (000)
Faculty	281	\$86,571	\$ 24,327
Staff	434	73,485	31,893
Students*	2,059	61,867	127,384
TOTAL	2,774		\$183,604

*Figures are for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 6
AUTOMOBILE DEMAND BY
ASU FACULTY, STAFF AND STUDENTS
Fiscal 1983-84

	Number of Autos Purchased	Average Value	Total Expenditures (000)
Faculty	715	\$7,637	\$ 5,461
Staff	1,120	6,376	7,141
Students*	10,074	5,446	54,863
TOTAL	11,909		\$67,465

*Figures are for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 7
DIRECT AND INDIRECT EMPLOYMENT IMPACT
Fiscal 1983-84

Employment Source	Number of Jobs
Direct Employment	
ASU Faculty and Staff	5,772
Employment Due to Student Expenditures*	4,896
Employment Due to University Expenditures for Supplies, Services, Equipment and Construction	1,111
Indirect Employment	6,007
TOTAL EMPLOYMENT IMPACT	17,786

*Figure is for the nine-month 1983-84 academic year.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

the industries that provide goods in the expenditure categories listed in Table 4. University spending for supplies, services, equipment and construction within Arizona resulted in an additional 1,111 jobs. Using an estimated multiplier of 1.51, indirect employment was found to be 6,007 jobs. This means that for each 100 jobs created by the expenditures of ASU or its faculty, staff and students, 51 additional jobs were generated as a result of re-spending or multiplier effects.

ASU AS AN EXPORTER OF SERVICES

Some \$112.6 million in funding was brought into Arizona from grants and non-resident fees as ASU exported research and education to the nation and the world. The role of the university as an exporter of services is illustrated in Table 8. When faculty receive federal grants or other financial support from non-Arizona sources, research services are exported and new dollars are injected into the Arizona economy. These funds are used to purchase supplies and equipment; to create jobs for graduate assistants, lab technicians, and clerical personnel; and to support faculty summer research activity.

During fiscal 1983-84, 317 ASU faculty members received \$16 million in grants from sources outside of Arizona. The state provided \$10.5 million in salary support for these faculty members. Thus, research grants alone had a taxpayer payback of approximately 150 percent. The provision of educational services to non-Arizona residents resulted in out-of-state and foreign student fees of \$28.6 million and non-resident student

TABLE 8
DOLLAR IMPACT OF
OUT-OF-STATE FUNDING SOURCES
Fiscal 1983-84

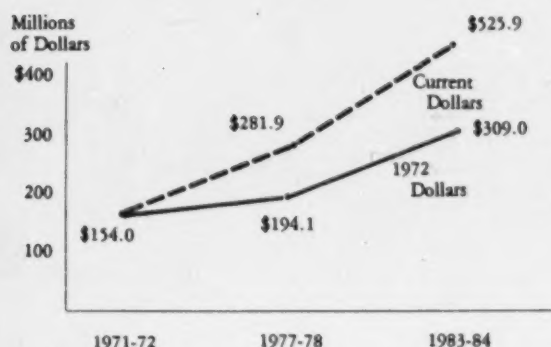
Source	Amount (Millions)
Federal and Other Grants	\$ 16.0
Out-of-State Student Fees*	24.6
Out-of-State Student Expenditures*	56.0
Foreign Student Fees	4.0
Foreign Student Expenditures	12.0
TOTAL	\$112.6

*Figures are for the nine-month 1983-84 academic year.

Source: Office of Research and Sponsored Programs Administration and Office of Management and Financial Analysis, Arizona State University.

expenditures in Arizona of \$68 million. In total, \$112.6 million from outside Arizona was received as educational services were provided. The net result is that the new dollars brought into Arizona exceeded, by some \$10 million, ASU's \$92.1 million state appropriation of taxpayer funds for 1983-84.

FIGURE V
COMPARISON OF
ASU DIRECT EXPENDITURE IMPACT
Fiscal 1971-72, 1977-78 and 1983-84



SOURCE: Bureau of Business and Economic Research, College of Business, Arizona State University.

ASU IMPACT GROWS

The impact of Arizona State University on the state's economy grew from \$154.0 million in fiscal 1971-72 to \$525.9 million in 1983-84 — a 342 percent increase (Figure V). Expressed in inflation-adjusted, or real, 1972 dollars, the economic impact has doubled since 1971-72. During the same period, enrollment rose 51.5 percent.

ASU's significant and rapidly growing contribution to the economy makes it clear that state money set aside for education offers very favorable returns. The intangible returns include enhancement of commerce, culture, and quality of life via the university's missions of instruction, research and service. Tangible aspects of ASU's impact, as this report illustrates, include millions of dollars in revenue for local industries, tax dollars for the public sector, and thousands of full-time jobs.

In summary, the presence of the university creates a massive, stable marketing area. As a result, society's investment in higher education brings not only desirable intangible benefits but also extremely attractive tangible returns.

Housing Appreciation in the Phoenix Metropolitan Area

JAY Q. BUTLER
TOM R. REX

Housing prices climbed dramatically in the Phoenix metropolitan area during the 1970s, then rose at a slower pace during the early 1980s. An accurate measure of these changes, however, has not been available. As a first step toward developing such a measure, the Bureau of Business and Economic Research and the Arizona Real Estate Institute, in the College of Business at Arizona State University, began in 1983 to publish a report on the number of homes sold in Maricopa County and the median price of these sales.¹ Based on all recorded real estate transactions, this report represents one of the most comprehensive compilations and analyses of market activity currently available. (See page 14 for a complete summary of data from 1981 to the present.)

In metropolitan Phoenix, the median rate of housing appreciation per quarter during the first half of 1984 was the same as it was during the 1981-83 period: 0.8 percent. This article examines the effect of housing characteristics and geographic area on appreciation and compares the appreciation rate to changes in sales prices and inflation.

Jay Q. Butler is Associate Professor of Real Estate in the College of Business, Arizona State University. He also serves as a Faculty Research Associate in the ASU Bureau of Business and Economic Research and is Director of the Arizona Real Estate Institute. Tom R. Rex is the Bureau's Manager of Research Support.

The median sales price, however, is not necessarily a good estimate of the median *value* of homes in the Phoenix area, since the mix of expensive and inexpensive houses that are sold may vary over time. For example, during the last recession in 1982, less expensive homes tended to sell most easily, causing the median sales price to decline. Hence, the change in median sales price is not necessarily a good indicator of housing *appreciation*, especially during a short time period.

The ideal means of measuring appreciation would be to track the sales history of individual properties. Recently, the Bureau used this methodology, which precludes the possibility of comparing unlike samples, to develop a measure of housing appreciation in the Phoenix area. From a data base of more than 130,000 single family sales transactions since 1981, 4,507 single family homes were identified as having been sold at least twice during the period of 1981-1983. The measure of appreciation was developed from the analysis of these properties. Sales that occurred during the first half of 1984 were added and analyzed later.

The Bureau's methodology excluded townhouses and condominiums because complete addresses were not usually available with which to uniquely identify each property (in many complexes, all units have the same street address). In addition, a selection process was used to exclude transactions with questionable information.

HOUSING APPRECIATION, 1981-83

The median rate of appreciation of 4,507 single family houses that sold at least twice during the 1981-83 period was 0.8 percent per quarter, or slightly more than 3 percent per year. As illustrated in Table 1, the rate of appreciation was slower in 1983 than in 1981 and early 1982. (This table can be interpreted as follows: during the third quarter of 1982, for example, 349 single family houses were sold that had also been sold in 1981 or early 1982; these properties had not been resold again through the end of 1983.) The decline in the rate of appreciation resulted from both a slowing general inflation rate and the rather severe recession that began late in 1981.

Neither the date of the original sale during the 1981-83 period nor the elapsed time between sales of a property had much effect on the rate of appreciation per quarter. Only those properties that were resold within two quarters of the previous sale had a different (slower) rate of appreciation.

TABLE 1
MEDIAN RATE OF APPRECIATION PER QUARTER,
BY QUARTER OF LAST SALE

Quarter	Number of Single-Family Houses	Median Percent Change Per Quarter
Second, 1981	17	1.1
Third, 1981	60	1.7
Fourth, 1981	112	1.5
First, 1982	157	1.1
Second, 1982	248	1.0
Third, 1982	349	1.2
Fourth, 1982	378	0.8
First, 1983	531	0.9
Second, 1983	739	0.8
Third, 1983	963	0.7
Fourth, 1983	953	0.9
Total	4,507	0.8

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

The slow rate of appreciation found in this study is comparable to findings at the national level. A National Association of Realtors analysis of national resale home data revealed that the median sales price increased 6.8 percent in 1981, 2.1 percent in 1982, and 3.7 percent in 1983.² For the 1981-83 period, median housing prices increased a total of 12 percent, in contrast to a 45 percent increase during the last three years of the 1970s.³

Effect of Housing Characteristics on Appreciation

While the overall rate of appreciation was 0.8 percent per quarter, some types of homes had higher or lower rates. New homes (their first sale between 1981 and 1983 was as a newly constructed property) appreciated 1.3 percent per quarter, while resale properties gained only 0.7 percent per quarter. Similarly, houses that were five or fewer years old at the time of their last sale between 1981 and 1983 had a greater rate of appreciation per quarter (1.1 percent) than those between six and fifteen years old (0.6 percent) and those more than fifteen years old (0.7 percent).

The size of the house had a slight impact upon the appreciation rate: The per quarter median increase was 0.8 percent for homes of less than 1,500 square feet, 0.9 percent for houses between 1,500 and 2,250 square feet, and 1.0 percent for dwellings with more than 2,250 square feet. A similar pattern was found when measuring size by the number of rooms in the house: Dwellings with four or fewer rooms appreciated 0.7 percent per quarter, while those with five or more rooms gained 0.9 percent per quarter.

The price of a house also affected its rate of appreciation per quarter: Houses that sold for less than \$60,000 (on the last sale) rose in value only 0.4 percent, while those priced between \$60,000 and \$100,000 appreciated 1.0 percent, and those priced at more than \$100,000 gained 1.2 percent.

Housing Appreciation By Geographic Area

In other demographic and real estate studies, Maricopa County has been divided into a number of districts.⁴ These districts, illustrated in Figure 1, have been used to provide geographic detail to appreciation rates. The areas of Maricopa County with the greatest rates of appreciation between 1981 and 1983 tended to be on the fringe of the Phoenix urbanized area (see Table 2): Paradise Valley (District 2), East Mesa (18), western suburbs (20), Sun City/Youngtown/Peoria (5), and Sun City West (22W). Sun City West, with an appreciation rate double the overall median, constituted nearly all of the sales in district 22W. The areas with the least appreciation were all within the city of Phoenix: the downtown/south central area (14), Metrocenter (4S), Christown (7), mid-town (11), and Maryvale (13).

Since many districts have a greater proportion of newer homes and/or larger homes and/or more expensive homes, much of the variation in the geographic appreciation rates can be explained by virtue of these

TABLE 2
MEDIAN RATE OF APPRECIATION PER QUARTER,
BY GEOGRAPHIC DISTRICT

Districts	Number of Single Family Houses	Median Percent Change Per Quarter
1N — North Scottsdale	134	0.9
1S — South Scottsdale	122	0.7
2 — Paradise Valley	260	1.3
3 — North Sunnyslope/ Moon Valley	372	0.7
4N — Northwest Phoenix	384	0.9
4S — Metrocenter	128	0.4
5 — Sun City/ Youngtown/Peoria	121	1.2
6 — Glendale	208	0.8
7 — Christown	81	0.5
8 — North Central Phoenix	75	0.6
9 — East Camelback	65	0.6
10 — East Central Phoenix	69	0.6
11 — Mid-town Phoenix	72	0.5
12 — West Central Phoenix	71	0.7
13 — Maryvale	373	0.5
14 — Downtown/South Central Phoenix	41	0.0
15 — South Phoenix	190	0.8
16N — North Tempe	80	0.7
16S — South Tempe	172	0.7
17N — North Mesa	188	1.0
17S — South Mesa	388	0.9
18 — East Mesa	281	1.2
19 — Chandler/Gilbert	128	0.9
20 — Western Suburbs	65	1.2
21 — Deer Valley	406	1.0
22W — Sun City West/ Rural Maricopa Co.	28	1.6
Total	4,507	0.8

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

characteristics. For example, the rapid rate of appreciation in the Paradise Valley area (District 2) is largely explained by its high proportion of recently built, large, expensive homes. Similarly, the low rate of appreciation in the Metrocenter area (4S) can be traced to its relatively old homes that are both smaller and lower priced than the metropolitan area's median.

The appreciation in certain districts, however, is not fully explained by these housing characteristics. In particular, greater appreciation than observed would have

been expected in the North Scottsdale (District 1N) and South Tempe (16S) areas since the housing is relatively new and expensive. Similarly, houses in the Sun City/Youngtown/Peoria area (5) and in the western suburbs (20) increased more in value than would have been expected, given their moderate ages and prices. Factors such as supply and demand and buyer characteristics may be influencing housing prices in these areas.

One factor that does not appear to be influencing housing appreciation is the proportion of homes sold more than once between 1981 and 1983, compared to the total number of sales in a district. All of the districts with the greatest ratios of multiple sales to total sales, at least 5 percent, were in North Phoenix: Paradise Valley (District 2), North Sunnyslope/Moon Valley (3), Northwest Phoenix (4N), and Metrocenter (4S). Those districts with the smallest ratios of multiple sales to total sales, less than 2.5 percent, included Sun City/Youngtown/Peoria (5), Sun City West (22W), and South Scottsdale (1S).

HOUSING APPRECIATION DURING 1984

The condition of the residential real estate market has improved considerably during the last two years, due to nearly stable interest rates and a strengthening economy, as demonstrated by an acceleration in sales. During 1982, in the depth of the recession, less than 24,000 resale single family houses were sold in the Phoenix area. The number of sales increased to more than 33,000 during 1983 and to an annualized rate of more than 38,000 during the first half of 1984. Of the more than 19,000 existing single family houses that sold during the first two quarters of 1984, more than 2,600 had previously sold between 1981 and 1983. Despite this improved market, the median rate of appreciation per quarter during the first half of 1984 was the same as during 1981-83: 0.8 percent.

This price stability can be explained by the dynamics of the real estate market. The value of real estate responds both to recent sales prices and to expectations for future prices. Since 1982, home prices have been relatively stable. Price stability encourages continued stability, since a seller does not have to realize a large profit from the sale of his/her current home in order to acquire another house. In addition, the overall inflation rate has been relatively low and shows no sign of accelerating. Buyers, therefore, are unlikely to accept a list price that is not reflective of these conditions. Thus, home prices tend to evolve, not radically change, as evidenced by price movements during 1984.

A COMPARISON OF APPRECIATION, SALES PRICES AND INFLATION

From the first quarter, 1981, through the second quarter, 1984, the rate of housing appreciation in Maricopa County has been slightly greater than the change in the median sales price of single family dwellings (see Table 3). Changes in the median sales price have been very uneven, however, with declining prices during the 1981-82 recession responsible for the smaller gain in this measure. Thus, the median sales price may increase more or less than the appreciation rate during any short time period, depending on interest rates and economic conditions in general; over the long term, however, the two measures are likely to indicate nearly the same amount of change.

TABLE 3
INFLATION MEASURES
(Percent Change Per Quarter)

Quarter	Median Sales Price, Single Family Home	Home Appreciation, By Quarter of Last Sale	Metropolitan Phoenix Consumer Price Index
Second, 1981	3.3%	1.1%	1.9%
Third, 1981	2.9	1.7	2.3
Fourth, 1981	-0.7	1.5	2.2
First, 1982	-3.9	1.1	1.6
Second, 1982	-0.6	1.0	0.5
Third, 1982	5.2	1.2	1.0
Fourth, 1982	-2.2	0.8	-2.0
First, 1983	-1.1	0.9	0.2
Second, 1983	4.1	0.8	1.7
Third, 1983	3.1	0.7	1.6
Fourth, 1983	1.4	0.9	0.5
First, 1984	0.3	0.8	1.9
Second, 1984	1.1	0.8	1.5
Total Percent Change (First quarter, 1981, through second quarter, 1984)	13.2%	14.1%	15.9%

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

During the latter part of the 1970s, housing was one of the best hedges against inflation, as home prices usually rose as fast as consumer prices, and frequently at a higher rate. During the 1981-83 period, the rate of appreciation was nearly the same as the overall inflation rate, as measured by the Metropolitan Phoenix Con-

sumer Price Index. Both measures still indicated relatively high rates in 1981 but slowed in 1982. Since the overall inflation rate fluctuates more than the appreciation rate, the two measures may not be consistent during a short time period. In addition, some lag occurs between an acceleration or deceleration in the inflation rate and the response in the rate of appreciation. Over the long term, however, the two measures will be roughly equal.

Again, this pattern is similar to that at the national level. During 1983, consumer prices increased 3.2 percent, while the median price of resale homes rose 3.7 percent. In 1982, consumer prices jumped 6.2 percent, but median resale home values gained only 2.1 percent.

SUMMARY

Since 1981, housing values in the Phoenix area have increased only slightly more than 3 percent per year, a sharp reversal of the rapid appreciation during the late 1970s. The housing market has apparently returned to the norm of prior periods in which the appreciation rate approximated the inflation rate. The old adage that one must own a house for at least three years in order to make a profit (net of real estate commissions and closing costs) appears to again be valid.

The Bureau of Business and Economic Research and the Arizona Real Estate Institute will continue to track housing appreciation in the Phoenix area on a quarterly basis. A complete analysis, similar to that presented in this article, will be performed annually. As more properties sell more than once since 1981, the size of the data base will expand, allowing more detailed analyses, both by geographic area and by housing characteristics.

¹Use of the median sales price is superior to use of the mean (average) sales price because the mean can be heavily skewed by extreme values. Because of the sale of a few very expensive homes, the mean sales price tends to be higher than the median sales price.

²Frank Katusak, "1983 Ends Four-Year Slide in Resale Market," *Real Estate Quarterly* (Spring, 1984): 4.

³1983: Housing Review, *Real Estate Quarterly* (Winter, 1984): 3.

⁴This districting has been copyrighted by the Maricopa County Housing Study Committee, which granted the Bureau of Business and Economic Research the right to use these designations in this article. These districts are used in the *Phoenix Metropolitan Housing Study* and were used in the *Inside Phoenix* study prior to 1982.

The U.S. Export Trading Company Act: Its Impact

DARA M. KHAMBATA

With fanfare and flourish, Congress passed and President Reagan signed into law the U.S. Export Trading Company Act on October 1, 1982. This landmark legislation removed the threat of antitrust violation for American businesses interested in setting up joint ventures to explore export markets. It also permitted commercial banks to own an interest in exporting ventures, thereby alleviating the common problems of insufficient capital backing for small manufacturers and inadequate support services for prospective exporters.

Individuals who had supported the U.S. Export Trading Company Act insisted that only if the antitrust threat were removed would export trading companies be able to develop the economies of scale necessary to facilitate trade. These economies of scale, along with the advantages of antitrust preclearance, and "counter-trade" (the U.S. exporter, in order to complete a deal, promises to buy or market products from the partner

nation) would permit U.S. firms to work together in new and unfamiliar ways. Partners might include manufacturers, investment banking firms, insurance companies, brokerage houses, banking firms or venture capital firms. The act would allow them to work with small companies to more effectively compete in world markets, which, in turn, would reverse the decline of America's trade position.

The purpose of this article is to evaluate the impact of the U.S. Export Trading Company Act on U.S. exporting efforts. It also examines the act's provisions, historical basis, and position in the scheme of U.S. export policy.

U.S. EXPORT TRADING COMPANY ACT

The U.S. Export Trading Company Act authorizes the U.S. Commerce Department to promote export trading companies and also to facilitate interaction between the producers of exportable goods and services and the firms that offer export services. It also allows the Commerce Department to act in consonance with the Justice Department in setting antitrust standards applicable to export trading companies and their certification. The law instructs the Export-Import Bank of the United States to prepare a loan guarantee program for export trading companies and to liberalize rules to increase the negotiability of commercial paper used in international financial transactions.

The act directs the Federal Reserve Board to monitor bank participation in export trading companies. Furthermore, it grants antitrust preclearance to traders and will substantially limit antitrust lawsuits that can be

The U.S. Export Trading Company Act of 1982 has prompted several major U.S. corporations to establish trading companies that handle exports, imports, and third-country sales. They sometimes work with banks to provide the capital backing and support services that small manufacturers need to pursue overseas markets for their goods. This article explores these efforts and evaluates the impact of U.S. trading companies to date.

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brought by private parties. In other words, the new law gives American business the chance to utilize government-sanctioned export trading institutions.

Fortunately, the U.S. Export Trading Company Act does not say what an export trading company is, only

what it can do. This allows American business to use its imagination and ingenuity to define whatever type of trading company will best fit its particular needs.

Important provisions of the U.S. Export Trading Company Act of 1982 are highlighted in Table 1.

TABLE 1
SIGNIFICANT PROVISIONS OF THE
U.S. EXPORT TRADING COMPANY ACT OF 1982

<i>Definition</i>	An export trading company (ETC) is a company doing business in the United States principally for the purpose of exporting goods and services produced in the United States and assisting unrelated companies in the export of their products overseas.
<i>Function</i>	An ETC may perform only one of the following two functions: exporting goods and services or providing facilitating services for unrelated exporters.
<i>Third Country Trade</i>	An ETC, as a company "principally" engaged in exporting, can engage in importing and trade between third countries (countries outside the United States).
<i>Foreign Ownership</i>	Foreign ownership of ETCs is permissible.
<i>Banking</i>	Bank holding companies and bankers' banks may invest up to 5 percent and loan up to 10 percent of their capital and surplus in an ETC. Bank holding companies and bankers' banks may own up to 100 percent of an ETC's stock. The Federal Reserve Board must approve any proposed investment. Under this process, a bank need only notify the FRB of the intended investment. If no objection is made within 60 days thereafter, the bank may proceed with the intended investment. A bank is exempt from the collateral requirements contained in the Federal Reserve Act for loans to its ETC.
<i>Antitrust Certification</i>	The Commerce Department is the certifying agency, subject to the concurrence of the Justice Department. Eligibility for certification is based upon four specific antitrust standards. Only the Secretary of Commerce, not the Justice Department, can revoke or modify a certificate. A certificate holder has complete immunity from U.S. antitrust laws, except for private party lawsuits for actual damages. Such lawsuits are subject to certain limitations (see text of act).

The U.S. Export Trading Company Act leaves the Webb-Pomerene Act (1916) intact, allowing U.S. companies to continue registering as Webb-Pomerene associations with the Federal Trade Commission. It

should be noted, however, that the Webb-Pomerene Act does not protect against the filing of private treble damage suits and does not encompass export of services.

HISTORICAL PERSPECTIVE

In order to examine export trading companies from a historical perspective, one must study the world trading operations of Japan's "sogo shosha." The sogo shosha facilitate international trade for manufacturing companies by offering truly one-stop, integrated services. They operate as importers, exporters, distributors, merchants, merchant bankers, trade flow developers, creators of new business, organizers of resource development and procurement, managers for turnkey projects, and financial and investment partners.

To facilitate trade, the sogo shosha take title to goods exported; conduct third country and countertrade; arrange for financing and foreign exchange; provide credit, marketing information and communications; and coordinate transportation and shipping. They also offer insurance coverage and customs documentation, serve as wholesalers and distributors, market products, license and arrange for joint ventures, engineer and construct industrial facilities, and provide follow-up services.

The six largest Japanese trading companies, Mitsubishi, Mitsui, Itoh, Marubeni, Sumitomo and Nisso Iwai deal with a total sales volume of approximately \$300 billion. Their profiles have dominated international trade in the 20th century. The largest of the sogo shosha, Mitsubishi and Mitsui, are becoming household words in America, as their international presence is increasingly visible in automobiles, appliances, computers and other products of daily life.

The Japanese model for export trading companies dates to the late 1800s, when government encouraged family-owned businesses to form large monopolies, called "zaibatsu." Their activities enabled Japan to become a large industrial power even though the country possessed few natural resources. After World War II, the zaibatsu were divested into smaller firms. They were reintroduced, however, in the late 1950s, and several small companies soon began to grow into enormous specialized trading organizations. Today, economic power in Japan rests in the hands of these companies, now referred to as the "sogo shosha." Their awesome international marketing network positions the country at the forefront of world trade.

In addition to the sogo shosha, approximately 8,500 smaller trading companies are based in Japan. Not only have they facilitated trade but they are also largely responsible for Japan's meteoric economic growth. In fiscal 1982, total sales by these companies ran approximately \$375 billion, or about 30 percent of Japan's

GNP. They accounted for close to 50 percent of Japan's exports and 60 percent of its imports.

Other industrialized nations are also successfully competing in world markets by providing government and financial institutions with assistance to support traders in a manner similar to the Japanese model. A specific example would be Korean trading companies such as Samsung, Daewoo, Hyundai, and Samwha. Generally, U.S. export trading companies start from a limited international experience and financial base, hoping to make fruitful partnerships in international trade. The finance function is a critical determinant of their success.

These new U.S. trading companies offer a striking contrast to the giant, century-old sogo shosha of Japan. The sogo shosha are entrenched in many investments and joint ventures worldwide. As they evolve to face the growing challenges of other multinational corporations, they provide a dynamic formula for the organization of U.S. export trading companies.

U.S. GOVERNMENT SUPPORT FOR INTERNATIONAL TRADERS

The Commerce Department is working jointly with other governmental departments and agencies to promote services in international trade. In particular, its objectives are fivefold:

- To heighten use of bilateral arrangements for resolving trade problems
- To remove export disincentives
- To prepare for participation in multilateral trade discussions
- To review reciprocity provisions in U.S. domestic legislation
- To develop adequate statistics on international services trade and investment

In response to the demands of service industries to be on equal footing with manufacturing industries, the International Trade Administration expanded the Office of Service Industries and placed it within the new export development structure of the Commerce Department. The office offers traditional governmental assistance in trade promotion events, counseling and trade contact work. It has targeted six service industry

sectors for priority treatment: insurance, architectural and engineering services, information, financial services, transportation and tourism. All of these sectors mesh well with the structure of the new Export Trading Company Act, particularly as exports of services exceed \$40 billion per year.

Concomitant with government assistance in expanding international trade, the Reagan administration's commitment to turn over more of the export expansion effort to the private sector has led to the formation of District Export Councils. A major factor in the growing national awareness of exports, their membership comes from manufacturers, banks, trade associations, educational institutions, and state and local governments. The Export Administration Act (1949) gives such organizations support and assistance in solving exporters' problems by coaching new exporters and providing vital information.

RECENT TRENDS

As a result of the U.S. Export Trading Company Act, several banks, retailers and manufacturers created new export trading houses. Sears Roebuck & Co. and First Chicago Corp., the holding company for First National Bank of Chicago, agreed to form a global export trading company, Sears World Trade. The new partners committed approximately \$35 million to the venture, which had an initial eight-year term, in the belief that it would give thousands of emerging global companies in the United States the capability to compete in world markets.

Other corporations with export trading companies include K Mart Corp., Security Pacific Corp., First Interstate Bankcorp, Citicorp, etc. J.C. Penney is following in the footsteps of Sears and K Mart, companies that also push their U.S. exports through foreign retail chains. Manufacturers, such as Peabody International Corp. (energy and environmental equipment) and General Electric, have set up separate trading companies.

The blue chip companies of America have devised their export trading companies along the lines of the *sogo shosha* of Japan. They handle exports, imports and third-country sales. General Electric is investigating heavy industrial lines, particularly companies with similar products that it can offer to many of its well-established customers overseas. The General Electric Trading Company acts as a sales representative, providing market information as well as sales and distribution services. Other services, such as financing and order processing, are also available.

Sears specializes in consumer and light industrial goods. They take title to the merchandise; in essence, the manufacturer receives his money faster, and Sears World Trade does the rest: shipping, documentation and other services related to the sale. With their extensive overseas offices and distributorships already in place, the amount of working capital needed by the new trading companies is limited.

It is widely felt that several more banks will become involved with export trading companies as well as other large industrial firms such as IBM, Dow Chemical, Texas Instruments, Hewlett-Packard, Westinghouse, and General Motors.

AN EVALUATION

Almost no U.S. trading company is making a profit, and most have managed to complete only a handful of small deals. A principal problem is that their managers tend to lack experience and expertise. Some skeptics argue that they may not have the patience to carefully cultivate export markets the way the Japanese have. International trading takes teamwork and is maintained through the personal relationships of professional managers and traders. Most U.S. companies lack such people — generally entrepreneurial and opportunistic individuals — and don't see the need for them.

Even the largest players, such as Sears Roebuck & Co., are stumbling. As a giant general trader with an immense consumer base, Sears World Trade is the best known of trading companies, and its goals have been vast. Its ambition is to become as large as any of the Japanese trading companies. Sears World Trade wants to be able to provide any product that any customer in any location might want. The company had losses of \$16.3 million for the five quarters ending March 31, 1984, on revenues of approximately \$120 million. Despite these losses, Sears World Trade is making some headway. A major re-evaluation of its five-year plan is underway, and a change in top management has been implemented. In addition, joint ventures have been formed in Germany, Italy, Hong Kong, the Philippines and England.

GE Trading, the largest U.S. trading company, won't be profitable until 1985. Formed in 1982, its volume last year was \$500 million, plus countertrade in support of other GE exports valued at approximately \$800 million.

The trading company operated by the Port Authority of New York and New Jersey is faltering, and Control Data's high-tech-oriented trading entity went out of business.

The trading company act was passed as the worldwide recession blunted demand for U.S. goods. Many foreign economies lacked currency, and many prime U.S. trading partners, such as debt-burdened Latin American countries, couldn't afford trade. Furthermore, the barter or countertrade requirements of a rapidly increasing number of countries befuddled some U.S. companies, and the rising value of the U.S. dollar hiked prices of U.S. goods 20 to 30 percent. Even the huge Japanese trading companies have felt the pinch — Mitsubishi's U.S. trading volume fell 4.5 percent in 1983.

Thus, the U.S. trade position has weakened considerably and is currently getting worse. The U.S. balance of trade deficit has widened from about \$70 billion in 1983 to about \$100 billion in 1984. Factors responsible for this deteriorating situation include *ad-hoc* economic policy and a substantially overvalued dollar.

Although no super success stories exist yet among U.S. trading companies, they are likely to occur in time. If the Japanese are to be viewed as a model, hard work and slow growth will make the most successful trading houses.

CONCLUSION

In spite of their similar purposes, there is ample room in international trade for both the Japanese *sogo shosha* and U.S. export trading companies. The primary challenge to the success of U.S. export policy will be changing the preoccupation of American business to an international orientation. If U.S. manufacturers can be educated to view themselves actively participating in international markets, America may once again become the pre-eminent leader in world trade.

A word of caution is necessary. When the U.S. Export Trading Company Act was passed, Congress was confident that businesses would respond enthusiastically to this stimulus, and exports would increase, improving the balance of trade. However, proponents of the legislation failed to analyze the review process of the Department of Commerce in order to determine if its stringency would effectively eliminate the law's benefits. There is already some indication that this might be the case. The Commerce Department has admitted that the sharing by companies of certain information, in order to obtain a waiver from antitrust laws under the U.S. Export Trading Company Act, may in itself be a violation of the statutes. If this were the case, these companies would be more reluctant to open

themselves to government oversight, and the U.S. Export Trading Company Act would have an adverse effect on trade.

Another major question facing U.S. trading companies is whether or not they will find and keep a large and regular customer base to make their services worth the effort. U.S. companies may or may not be willing to hand over their foreign operations to another company. They might welcome the extra sales, but once those sales become substantial, some of the companies will be tempted to drop the trading company and go overseas directly.

Profits from joint export ventures can be calculated only on a long-term basis. However, the American propensity to emphasize short-term returns may cause many corporations to question the viability of their investments. Nonetheless, the acceptance of the trading company concept by some U.S. businesses indicates that it may develop into a highly successful program over the long term. It may not represent the export panacea that some enthusiasts envisioned, but, at the very least, it has enticed many more small and medium-sized firms to consider export marketing.

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Arizona Construction Activity

Second Quarter, 1984

JAY Q. BUTLER

Stimulated by a strengthening economy, construction activity continued to improve through the second quarter of 1984. Leading areas of activity were the multifamily (apartment) and industrial sectors.

A total of 29,593 permits, valued at \$1.5 billion, were issued throughout Arizona, in contrast to 31,442 permits worth \$979 million for the second quarter of 1983. The \$1.5 billion represents the highest level of value achieved during the 1980s. Most of the construction activity continued to occur in the counties of Pima and Maricopa, which combined for 87 percent of the total dollar value compared to 84 percent for a year ago. Specific areas of construction activity are reported in Table 1; the quarterly building permits, new housing starts, and real estate sales tables are at the end of this report.

SECTORAL ACTIVITY

Residential

Maricopa County. Rising interest rates contributed to a 2 percent decline in the number of single family per-

mits issued during the second quarter (5,783) from the first quarter (5,937) and a 13 percent decrease from the 6,670 permits issued a year ago. Even with this reduction in activity, several cities reported a second quarter increase in activity over the first quarter: Glendale (394 permits to 476 permits), Mesa (631 permits to 814 permits), Scottsdale (427 permits to 488 permits) and Chandler (649 permits to 824 permits).

Home construction is a fundamental element of the economy and is important for continued economic development. Even with increasing interest rates, builders have been able to sustain the market through the use of adjustable rate mortgages and other innovative financing and marketing programs. As shown in Table 2, single family activity in the first half of 1984, with 11,720 permits, was greater than it was during the comparable 1983 period, when 11,340 permits were issued.

Remodeling activity continued to be strong, with 1,563 permits (\$11 million) issued. A total of 3,759 remodeling permits (\$29 million) were issued during the first half of 1984, in contrast to 4,032 permits (\$21 million) for the first six months of 1983.

New home sales activity declined slightly from 2,552 homes during the first quarter to 2,541 homes during the second quarter, comparable to the 2,457 new homes sold during second quarter, 1983. The metropolitan median sales value increased over the first quarter from \$74,750 to \$75,875, in contrast to the \$68,425 value of second quarter, 1983. Some of the price movement can be explained by the increased sales of higher-priced homes. During second quarter, 1983,

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only 26 percent of all new home sales were for more than \$80,000. During second quarter, 1984, 41 percent of the new home sales were for more than \$80,000. The movement to higher-priced homes is also reflected in permit activity. Although the number of permits declined from the first quarter level, the dollar value increased from \$376 million to \$383 million during the second quarter.

In the resale market, the number of homes sold increased from 8,520 during the first quarter to 10,492 for the second quarter. The median sales value increased slightly from \$71,225 in the first quarter to \$72,000 during the second quarter. Unlike the new home sector, the resale sector has not demonstrated increased sales activity in the higher-priced home category. For the second quarter, 1983, 30 percent of the homes were sold for more than \$80,000, compared to 37 percent during the second quarter, 1984. More information on sales activity is reported on page 29 of this issue.

Rest of Arizona. Activity in the single family home sector also declined in Pima County from 1,224 permits issued during the first quarter to 1,134 permits during the second quarter. As shown in Table 2, single family activity for the first half of 1984, with 2,358 permits issued, was slightly less than the 2,443 permits issued during the first half of 1983. Mobile homes continued to play an important role in the Pima County housing market. The 1,210 permits issued during the first half of 1984 contrasted with only 950 permits issued in Maricopa County.

Following the pattern established in the metropolitan counties during the second quarter, single family activity in the other counties decreased 12 percent from the first quarter level (1,867 permits to 1,637 permits). Total dollar value, however, increased from \$75 million to \$76 million. The most activity occurred in the cities of Sierra Vista (65 permits), Flagstaff (89 permits), and Lake Havasu City (102 permits); and in the unincorporated areas of Gila (93 permits), Coconino

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(Second Quarter 1984, First Quarter 1984, and Second Quarter 1983)

	COMMERCIAL									
	SINGLE FAMILY		APARTMENTS ^a		OFFICE BUILDINGS ^b		RETAIL STORES ^c		INDUSTRIAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
MARICOPA COUNTY										
Second Quarter, 1984.....	5,783	383,006,339	487	338,600,771	112	78,626,521	220	54,795,378	134	52,279,204
First Quarter, 1984.....	5,937	376,639,887	613	254,155,458	70	72,215,918	222	38,009,677	167	35,259,999
Second Quarter, 1983.....	6,670	325,482,709	403	140,029,283	59	27,080,694	124	23,980,172	90	20,089,026
PIMA COUNTY										
Second Quarter, 1984.....	1,134	65,622,789	138	60,050,408	26	13,297,945	23	2,832,202	33	11,910,507
First Quarter, 1984.....	1,224	67,436,367	59	54,556,789	22	16,315,800	14	2,091,068	10	2,439,100
Second Quarter, 1983.....	1,307	69,660,397	22	39,392,814	31	13,076,762	22	8,419,584	4	1,376,000
REST OF ARIZONA										
Second Quarter, 1984.....	1,634	75,909,428	44	10,916,989	48	5,114,991	76	8,591,830	37	13,716,414
First Quarter, 1984.....	1,867	74,896,281	24	6,455,683	19	1,864,169	132	22,138,494	24	1,946,662
Second Quarter, 1983.....	1,622	69,858,948	31	11,472,261	34	2,887,876	64	5,038,497	28	1,578,241
ARIZONA TOTAL										
Second Quarter, 1984.....	8,551	524,538,556	669	409,568,168	186	97,039,457	319	66,219,410	204	77,906,125
First Quarter, 1984.....	9,028	518,972,535	696	315,167,930	111	90,395,887	368	62,239,239	201	39,645,761
Second Quarter, 1983.....	9,599	465,002,054	456	190,894,358	124	43,045,320	210	37,438,253	122	23,043,567

^aFive or more housing units.

^bOffice, banks, medical and professional buildings.

^cShopping centers and other mercantile buildings.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

(124 permits), Navajo (203 permits), Yavapai (208 permits), and Yuma (100 permits). Mobile home activity declined from 1,402 permits issued during the first quarter to 1,312 permits for the second quarter. Mohave County again led this sector, with 387 permits, followed by Yavapai (183 permits), Pinal (182 permits), Yuma (156 permits) and Coconino (128 permits).

Commercial

Maricopa County. The multifamily (apartment) sector continued to dominate commercial construction activity during the second quarter, with 487 permits (\$338 million) issued. As presented in Table 2, 35,459 housing units were permitted during the first half of 1984, compared to 23,349 units for the same period in 1983. Apartments (five or more units) accounted for 21,071 units, compared to only 9,820 units during the first six months of 1983. In Mesa, 3,943 multifamily units (\$125.6 million) were permitted in June as developers anticipated an increase in sewer and water fees. Even with the record level of activity, the apartment vacancy rate was a fairly typical 11 percent.

The three-to-four family sector continued to decline,

from 189 permits in the first quarter to 160 permits. As in the past, most of the activity occurred in Mesa (53 permits) and Phoenix (57 permits).

The office building sector improved again, moving from 70 permits (\$72 million) during the first quarter to 112 permits (\$79 million). This activity is a definite improvement over the 59 permits (\$27 million) issued during the second quarter of 1983. Office building activity was most evident in Chandler (6 permits at \$3 million), Glendale (7 permits at \$3 million), Mesa (14 permits at \$8 million), Phoenix (67 permits at \$43 million), Scottsdale (7 permits at \$6 million), and Tempe (5 permits at \$19 million). In Tempe, two major projects were permitted, one worth \$11 million (240,000 square feet), the other valued at \$5.5 million (113,000 square feet). Phoenix projects receiving permits include a 111,000-square-foot building (\$3.6 million), a 176,000-square-foot project (\$2.1 million), and a 102,000-square-foot complex (\$4 million).

The retail sector improved significantly, moving from 222 permits worth \$38 million in the first quarter to 220 permits valued at \$55 million. Like the office building sector, retail sector activity picked up from

TABLE 2
ARIZONA HOUSING ACTIVITY
(First Half 1983 and First Half 1984)

	BUILDING PERMITS ISSUED					Total Housing Units
	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	
MARICOPA COUNTY						
1983	11,340	859	191	237	667	23,349
1984	11,720	950	161	349	1,100	35,459
PIMA COUNTY						
1983	2,443	1,369	46	17	44	8,040
1984	2,358	1,210	72	34	197	9,119
REST OF ARIZONA						
1983	2,662	2,938	28	71	41	6,480
1984	3,501	2,714	62	53	68	7,237
ARIZONA TOTAL						
1983	16,445	4,766	265	325	752	37,869
1984	17,579	4,874	295	436	1,365	51,815

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

year-ago levels, with 124 permits (\$24 million). Areas of activity include Glendale (3 permits valued at \$2 million), Mesa (19 permits valued at \$18 million), Phoenix (63 permits valued at \$14 million), and Tempe (15 permits valued at \$3.5 million).

Rest of Arizona. As in Maricopa County, second quarter apartment development in Pima County was very strong, with 138 permits (\$60 million) issued. During the first half of 1984, 197 permits were issued for 5,271 units, in contrast to the 44 permits for 4,068 units issued during the same period last year (See Table 2). In the office building sector, 26 permits were valued at \$13 million, which is comparable to both the first quarter and year-ago figures. Stability was also evident in the retail sector, with 23 permits worth \$2.8 million (See Table 2).

The apartment sector continued to expand in the non-metropolitan counties, with 44 permits (\$11 million) issued, well above the 24 permits (\$6 million) of the first quarter. Areas of apartment development include Eagar (1 permit for 24 units), Mohave Valley North (26 permits for 245 units), and Prescott (2 permits for 14 units). The office building sector also improved from 19 permits (\$2 million) during the first quarter to 48 permits (\$5 million). Primary areas of activity include Cochise County (4 permits at \$1 million), Mohave Valley South (1 permit at \$144,000), Navajo County (1 permit at \$122,000), Casa Grande (6 permits at \$882,000), and Yuma (6 permits at \$1 million). With 76 permits worth \$8.5 million, the retail sector declined appreciably from the first quarter, when 132 permits valued at \$22 million were issued.

Industrial

The industrial sector in Maricopa County continued to strengthen over the first quarter (167 permits at \$35 million) to 134 permits (\$52 million). This was also a definite improvement over the year-ago level of 90 permits worth \$20 million. Areas of industrial development activity during the second quarter included Gilbert (10 permits at \$4 million), Glendale (5 permits at \$1.3 million), Mesa (7 permits at \$3 million), Phoenix (52 permits at \$25 million), Scottsdale (3 permits at \$2.2 million) and Tempe (49 permits at \$12 million).

During the first quarter, much of the permit activity was for remodeling or expanding existing structures; however, the development of new buildings was more evident during the second quarter. For example, Tempe issued 33 permits (\$8.4 million) for new

buildings and 59 permits (\$4 million) for alterations during the first quarter, while the second quarter figures include 40 permits (\$2.1 million) for alterations and 28 permits (\$10 million) for new buildings. Increased construction of new buildings demonstrates the growth of the economy.

Pima County reported a strong advance in industrial development, with 33 permits (\$12 million) issued. This was well above the first quarter level of 10 permits (\$2.4 million) and the year-ago figure of 4 permits (\$1.3 million). Most of the activity occurred in the unincorporated areas of the county.

Throughout the rest of Arizona, industrial activity followed the same pattern, with 37 permits (\$13 million) issued, which is well above the 24 permits (\$2 million) issued during the first quarter. Most of the industrial activity was accounted for by one permit worth \$10 million that was issued in Casa Grande.

LOOKING AHEAD

During the 1980s, the economy has been undergoing a tremendous transformation that includes deregulation, changes within the financial institutions, and significant growth in newer areas of the economy such as electronics, services, and high technology. These changes, coupled with high interest rates, have created an economic environment of great uncertainty but great promise, especially in Arizona.

Innovation has been the primary means for the construction industry to overcome uncertainty and has been especially evident in the areas of financing, marketing, and building technology. During previous recoveries, the single family sector led the industry. In contrast, the current recovery is being driven by the apartment sector and other commercial development. The growth in these sectors is fueled by economic expansion and the use of new financing forms, such as syndication and joint venture. This activity is especially evident in Pima and Maricopa counties.

Although the single family sector is not dominant, it has been able to maintain a good level of activity due to population growth, consumer confidence, and new mortgage formats. The use of adjustable rate mortgages, with their low initial interest rates, has been increasingly popular with lenders and borrowers alike. Concern exists about the impact of higher interest rates on the ability of people to make payments, although failure to do so has yet to become evident. While innovative financing is important, it would be of little use

unless people were willing to buy homes. Given current market activity, it appears that people have the willingness, for the economy is strong and consumer confidence is good. In the metropolitan counties, the unemployment rate has been decreasing. Hence, people have confidence about their economic future and are willing to make long-term commitments.

It is evident from construction activity in the second quarter that economic growth is not occurring statewide. Due to reliance on the mining and forest products industries, several counties have not really participated in Arizona's recovery. Hence, residents have little confidence in their economic futures; this, in turn, will adversely affect the real estate market in these

areas. In order for economic development and population growth to occur throughout the state, each county will have to establish an economic base that will instill confidence in its residents' economic future.

While new real estate concepts are useful, the key to growth is still confidence in the future. Given the economic potential of Arizona, confidence is high, providing the stimulus for development. The only negative is the level and direction of interest rates, which not only affect the cost of development but also confidence concerning the future. As long as builders and consumers are able to use innovative means for limiting the impact of high rates, the long-term outlook for Arizona is very good for expanding construction activity.

Arizona New Housing Starts: Quarterly Report

SECOND QUARTER, 1984

BUILDING PERMITS ISSUED

	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	Total Housing Units
APACHE COUNTY	38	9	0	0	1	71
Eagar	12	3	0	0	1	39
St. Johns	1	4	0	0	0	5
Springerville	4	0	0	0	0	4
Unincorporated	21	2	0	0	0	23
COCHISE COUNTY	127	97	0	0	1	233
Benson	0	7	0	0	0	7
Bisbee	2	0	0	0	0	2
Douglas	5	0	0	0	0	5
Huachuca City	0	0	0	0	0	0
Sierra Vista	65	25	0	0	0	90
Tombstone	1	5	0	0	0	6
Unincorporated	54	56	0	0	1	119
Willcox	0	4	0	0	0	4
COCONINO						
COUNTY	235	128	9	3	1	403
Flagstaff	89	22	8	1	1	141
Fredonia	0	6	0	0	0	6
Page	17	12	0	2	0	37
Unincorporated	124	85	0	0	0	209
Williams	5	3	1	0	0	10
GILA COUNTY	131	66	0	1	0	201
Globe	1	0	0	0	0	1
Hayden	0	0	0	0	0	0
Miami	1	0	0	0	0	1
Payson	34	32	0	1	0	70
Unincorporated	95	34	0	0	0	129
GRAHAM COUNTY	15	37	0	0	0	52
Pima	1	4	0	0	0	5
Safford	6	1	0	0	0	7
Thatcher	4	11	0	0	0	15
Unincorporated	4	21	0	0	0	25
GREENLEE COUNTY	2	1	0	0	0	3
Clifton	0	1	0	0	0	1
Duncan	1	0	0	0	0	1
Unincorporated	1	0	0	0	0	1
LA PAZ COUNTY	4	48	0	0	1	57
Parker	0	0	0	0	1	5
Unincorporated	4	48	0	0	0	52
MARICOPA						
COUNTY	5,783	437	65	160	487	18,702
Avondale	15	21	0	0	0	36
Buckeye	1	2	0	1	0	7
Chandler	824	0	3	1	1	1,058
El Mirage	0	0	0	0	0	0
Gila Bend	1	0	0	0	0	1
Gilbert	74	1	0	6	7	179
Glendale	476	0	6	0	98	1,779
Goodyear	4	0	0	0	0	4
Guadalupe	N/R	N/R	N/R	N/R	N/R	N/R
Mesa	814	0	5	53	57	6,793
Paradise Valley	24	0	0	0	0	24
Peoria	409	0	6	0	1	565
Phoenix	1,452	82	43	57	195	4,562
Scottsdale	488	1	0	8	52	1,029
Surprise	2	12	0	0	0	14
Tempe	260	0	2	6	51	1,016
Tolleson	1	0	0	0	0	1
Unincorporated	933	318	0	25	25	1,615
Wickenburg	5	0	0	2	0	11
Youngtown	0	0	0	1	0	8

N/R: No Report.

BUILDING PERMITS ISSUED

	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	Total Housing Units
MOHAVE COUNTY	222	387	2	5	30	900
Kingman City	28	0	0	0	0	28
Kingman Area	13	72	0	0	0	85
Lake Havasu City	102	6	0	3	4	142
Lake Havasu Area	0	9	0	0	0	9
Mohave Valley N.	42	156	2	2	26	455
Mohave Valley S.	10	97	0	0	0	107
Dolan Springs	5	19	0	0	0	24
Sacramento Valley	7	26	0	0	0	33
Mohave General	15	2	0	0	0	17
NAVAJO COUNTY	224	14	0	0	0	238
Holbrook	0	0	0	0	0	0
Show Low	11	10	0	0	0	21
Snowflake	4	0	0	0	0	4
Taylor	3	0	0	0	0	3
Unincorporated	203	0	0	0	0	203
Winslow	3	4	0	0	0	7
PIMA COUNTY	1,134	586	46	6	138	4,399
Marana	0	6	0	0	0	6
Oro Valley	8	0	0	0	0	8
South Tucson	3	0	0	0	0	3
Tucson	266	137	46	6	21	1,750
Unincorporated	857	443	0	0	117	2,632
PINAL COUNTY	83	182	22	10	4	406
Apache Junction	12	84	0	4	1	117
Casa Grande	11	0	0	0	0	11
Coolidge	0	0	0	0	0	0
Eloy	1	4	0	0	0	5
Florence	1	14	1	4	1	38
Kearny	1	0	0	0	0	1
Mammoth	0	2	0	0	0	2
Superior	1	0	0	0	0	1
Unincorporated	56	78	21	2	2	231
SANTA CRUZ						
COUNTY	27	4	0	0	0	31
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	0	4	0	0	0	4
Unincorporated	27	0	0	0	0	27
YAVAPAI COUNTY	381	183	13	8	3	648
Chino Valley	11	27	0	0	0	38
Clarkdale	1	0	0	0	0	1
Cottonwood	15	6	2	0	0	25
Jerome	0	0	0	0	0	0
Prescott	75	15	1	3	2	118
Prescott Valley	71	19	4	1	0	102
Unincorporated	208	116	6	4	1	364
YUMA COUNTY	145	156	2	0	3	315
Somerton	2	0	0	0	0	2
Unincorporated	100	140	2	0	0	244
Wellton	0	0	0	0	0	0
Yuma	43	16	0	0	3	69
Total, Maricopa Co., 2nd Qtr., 1984	5,783	437	65	160	487	18,702
Total, Maricopa Co., 2nd Qtr., 1983	6,670	400	111	144	403	13,797
Percent Change	-13	9	-41	11	20	35
Total, Arizona, 2nd Qtr., 1984	8,551	2,335	159	193	669	26,659
Total, Arizona, 2nd Qtr., 1983	9,599	2,692	163	190	456	21,691
Percent Change	-10	-13	-2	1	46	22

Arizona Building Permits: Quarterly Report

	RESIDENTIAL*			COMMERCIAL			INDUSTRIAL			OTHER			TOTAL		
	Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value	
APACHE COUNTY															
Eagar	62	1,270,696		2	900,900		0	0		9	99,250		73	2,276,846	
St. Johns	17	564,860		2	900,900		0	0		2	8,600		21	1,474,360	
Springerville	5	N/C		0	0		0	0		0	0		5	N/C	
Unincorporated	10	N/C		0	0		0	0		0	0		11	N/C	
COCHISE COUNTY															
Benson	346	705,836		0	0		0	0		1	N/C		36	796,486	
33		8,489,265		29	7,413,414		2	155,000		6	90,650		811	17,984,860	
Bisbee	18	92,050		0	0		0	0		434	1,927,181		20	104,700	
Douglas	40	127,900		0	0		0	0		7	12,650		20	304,300	
Huachuca City	13	685,310		0	0		0	0		2	176,400		97	932,092	
Sierra Vista	112	34,614		0	0		0	0		57	266,782		14	37,614	
Tombstone	9	2,627,602		7	2,409,304		0	0		1	3,000		387	5,719,842	
Unincorporated	135	39,650		0	0		0	0		268	682,936		215	10,713,952	
Willcox	6	4,881,539		19	4,968,500		2	155,000		59	708,913		31	75,600	
COCONINO COUNTY															
Flagstaff	519	17,036,233		47	4,251,930		8	734,460		125	1,235,170		699	23,255,793	
Fredonia	184	8,730,957		33	2,495,619		6	595,500		63	907,200		286	12,727,276	
Page	10	11,250		2	2,500		0	0		3	3,188		15	16,938	
Unincorporated	52	1,335,828		2	286,305		0	0		9	190,028		63	1,812,161	
Williams	260	6,458,820		7	455,506		1	120,960		35	122,606		303	7,157,892	
GILA COUNTY															
Globe	318	5,025,154		4	107,300		5	271,917		15	10,148		32	1,541,526	
Hayden	10	66,300		0	0		0	0		51	743,745		378	6,148,116	
Miami	1	500		0	0		0	0		16	79,447		26	145,747	
Payson	4	56,344		0	0		0	0		6	2,100		7	2,600	
Unincorporated	138	1,003,836		1	49,300		0	0		0	0		4	56,344	
GRAHAM COUNTY															
Pima	165	3,898,174		3	58,000		4	243,917		10	19,456		153	1,316,509	
Safford	107	1,279,748		13	135,060		1	28,000		19	642,742		188	4,626,916	
Thatcher	16	77,212		1	10,000		2	150,400		15	37,450		137	1,602,598	
Unincorporated	25	307,550		7	69,100		2	150,400		11	35,350		28	122,562	
GREENLEE COUNTY															
Clifton	41	479,786		0	0		0	0		2	1,500		36	527,650	
Duncan	7	103,000		0	0		0	0		2	0		27	416,700	
Unincorporated	4	68,000		0	0		0	0		0	0		46	535,686	
LA PAZ COUNTY															
Parker	1	35,000		0	0		0	0		2	3,250		9	106,250	
Unincorporated	87	1,088,866		5	413,998		0	0		0	0		4	N/C	
MARICOPA COUNTY															
Avondale	78	1,013,866		3	329,800		5	221,520		21	212,642		2	35,000	
Buckeye	8,052	401,031,749		2	84,198		0	0		0	0		118	1,937,026	
Chandler	46	590,700		1,163	536,803,609		5	221,520		21	212,642		12	404,800	
Gila Bend	976	47,566,397		1	50,000		0	0		8,370	112,607,690		106	1,532,226	
Gilbert	11	18,974		1	8,393,643		1	706,000		6	65,075		17,719	1,102,722,232	
Glendale	5	24,542		13	472,732		1	50,000		22	94,000		68	655,775	
Goodyear	87	4,191,030		2	2,727,382		1	706,000		6	94,000		12	216,000	
Guadalupe	552	30,243,968		14	34,144,623		0	0		1,235	4,257,895		2,225	61,123,935	
Mesa	5	202,412		4	103,000		0	0		8	55,650		21	547,356	
Paradise Valley	N/R	N/R		N/R	N/R		0	0		4	30,000		9	54,542	
Peoria	905	53,225,974		157	235,315,376		7	2,996,997		30	105,655		177	11,172,540	
Phoenix	61	4,633,720		3	56,530		0	0		N/R	N/R		1,118	70,233,645	
Scottsdale	454	12,838,308		12	2,793,063		0	0		989	23,100,268		2,058	314,638,615	
Surprise	2,373	107,478,856		399	136,653,115		3	319,796		116	991,120		180	5,681,370	
Tempe	366	63,204,346		107	39,650,426		52	25,265,964		338	3,123,361		807	19,074,528	
Tolleson	16	541,996		1	360,000		3	2,291,835		2,214	38,081,389		5,038	307,479,524	
Unincorporated	6	106,437		151	45,835,900		0	0		612	25,027,944		1,317	130,174,551	
Wickenburg	1,582	54,885,739		156	29,324,819		49	12,065,000		358	4,443,800		924	83,595,900	
Youngtown	8	205,150		5	493,000		3	3,327,000		1	9,000		7	115,437	
	0	0		1	230,000		0	0		1,924	7,356,230		3,665	95,073,788	
										6	168,757		13	698,150	
										0	0		7	398,757	

Arizona Building Permits: Quarterly Report (continued)

SECOND QUARTER, 1984

	RESIDENTIAL*			COMMERCIAL			INDUSTRIAL			OTHER			TOTAL		
	Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value	
MOHAVE COUNTY															
Kingman City	1,110	17,848,078		83	10,602,758		3	439,670		710	2,858,674		1,906	31,749,180	
Kingman Area	60	1,167,236		15	812,212		0	0		17	543,286		92	2,622,734	
Lake Havasu City	132	2,010,287		4	68,205		2	145,670		204	422,119		362	2,646,281	
Lake Havasu Area	139	5,012,097		13	1,664,288		0	0		52	344,294		204	7,020,679	
Mohave Valley N.	13	127,871		0	0		0	0		10	35,556		23	163,427	
Mohave Valley S.	474	3,199,226		34	7,402,975		0	0		219	838,759		727	13,440,960	
Dolan Springs	160	2,241,818		11	501,338		0	0		113	362,727		284	3,105,883	
Sacramento Valley	33	501,126		1	41,472		0	0		30	43,053		64	585,651	
Mohave General	52	670,617		4	81,164		0	0		43	95,464		99	847,245	
Holbrook	27	917,800		1	31,104		1	294,000		22	173,416		51	1,416,320	
Navajo County	402	8,935,532		8	1,436,283		2	25,000		49	314,091		461	10,710,906	
Show Low	5	16,500		2	75,000		0	0		4	90,000		11	181,500	
Snowflake	40	735,358		2	1,029,560		0	0		31	23,926		73	1,808,844	
Taylor	9	N/C		0	0		0	0		0	0		9	N/C	
Unincorporated	4	175,000		0	0		2	25,000		1	9,000		7	209,000	
Winslow	327	7,797,874		2	182,163		0	0		11	183,165		340	8,163,202	
PIMA COUNTY	17	190,800		2	149,560		0	0		2	8,000		21	348,360	
Marana	2,525	72,982,332		215	91,555,454		33	11,910,507		2,017	49,584,282		4,790	226,032,575	
Oro Valley	7	N/C		0	0		0	0		0	0		7	N/C	
South Tucson	16	765,052		0	0		0	0		0	0		9	799,852	
Tucson	9	337,423		1	182,040		0	0		5	34,800		21	701,577	
Unincorporated	833	18,360,940		79	48,375,254		0	0		11	182,114		21	83,883,729	
PINAL COUNTY	1,660	53,318,917		135	42,798,160		11	1,574,898		1,178	15,372,637		2,101	140,647,417	
Apache Junction	375	5,001,192		36	4,035,509		22	10,335,609		823	33,594,731		2,640	28,203,647	
Casa Grande	113	1,545,423		10	915,098		4	11,157,078		298	8,009,868		713	7,165,511	
Coolidge	28	680,956		7	1,285,311		2	10,833,078		136	4,704,990		259	15,297,006	
Eloy	12	41,120		1	9,100		0	0		35	2,497,661		72	64,220	
Florence	13	51,999		2	25,500		1	300,000		11	14,000		24	390,127	
Kearny	22	144,000		5	292,000		0	0		13	12,628		29	444,500	
Manmoth	2	50,400		0	0		0	0		2	8,500		29	57,040	
Superior	2	N/C		0	0		0	0		3	6,640		5	N/C	
Unincorporated	3	15,500		1	2,500		0	0		5	2,900		9	20,900	
SANTA CRUZ COUNTY	180	2,471,794		10	1,506,000		0	0		93	762,549		284	4,764,343	
Nogales	39	1,943,379		0	0		1	24,000		12	2,649,000		51	4,592,379	
Pagsonia	N/R	N/R		N/R	N/R		0	0		N/R	N/R		N/R	N/R	
Unincorporated	8	63,179		0	0		0	0		1	12,000		9	75,179	
YAVAPAI COUNTY	31	1,880,200		0	0		0	0		11	2,637,000		42	4,517,200	
Chino Valley	787	23,643,166		45	4,547,590		2	268,769		352	3,644,342		1,186	32,103,867	
Clarkdale	42	737,876		1	55,600		0	0		19	244,108		62	1,037,584	
Cottonwood	34	42,353		10	1,318,751		1	112,129		4	20,054		8	126,142	
Jerome	7	1,112,348		0	0		0	0		14	106,587		59	2,649,815	
Prescott Valley	148	4,455,633		0	0		1	156,640		1	4,000		8	10,500	
Unincorporated	107	2,982,901		4	339,880		0	0		151	2,273,655		310	8,318,182	
YUMA COUNTY	446	14,305,375		19	1,337,350		0	0		27	221,636		138	3,544,417	
Somerton	391	11,739,205		20	4,325,880		0	0		136	774,302		601	16,417,227	
Unincorporated	7	82,000		4	0		0	292,600		127	2,639,377		542	18,997,062	
Wellton	271	8,718,429		10	2,993,556		0	292,600		2	612,514		9	694,514	
Yuma	0	0		0	0		0	0		54	574,921		339	12,579,506	
Total, Maricopa Co., 2nd Qtr., 1984	113	2,938,776		0	0		0	0		0	0		0	0	
Total, Maricopa Co., 2nd Qtr., 1983	8,052	401,031,749		10	1,332,324		0	0		71	1,451,942		194	5,723,042	
Percent Change	9,453	345,318,377		134	536,803,609		0	52,279,204		8,370	112,607,690		17,719	1,102,722,252	
Total, Arizona, 2nd Qtr., 1984	15,127	577,417,595		43	210,604,735		90	20,089,026		8,772	90,153,897		19,123	666,166,033	
Total, Arizona, 2nd Qtr., 1983	17,141	518,688,692		48	666,529,625		204	77,906,125		24	186,564,012		29,593	1,508,417,357	
Percent Change	-11	302,956,731		122	302,956,731		67	23,043,567		13,059	134,668,533		31,442	979,357,523	
		120			120			238		-3	38		-5	54	

*Includes mobile homes

N/R: No report

N/C: Some communities do not collect dollar valuations.

Metropolitan Phoenix Real Estate Sales: Quarterly Report

SECOND QUARTER, 1984

	Single Family			Townhouse / Condominium			Grand Total
	New	Resale	Total	New	Resale	Total	
First Quarter, 1981.....	\$72,600	\$62,500	\$63,500	\$62,950	\$58,000	\$58,800	\$62,800
Second Quarter, 1981.....	73,700	65,000	65,600	63,500	61,000	61,000	65,000
Third Quarter, 1981.....	77,900	66,700	67,500	65,000	61,000	61,000	66,500
Fourth Quarter, 1981.....	75,100	66,500	67,000	67,000	60,000	61,450	66,000
Annual, 1981.....	74,800	65,000	65,900	64,400	60,000	60,500	65,000
First Quarter, 1982.....	73,800	63,200	64,400	67,000	55,000	58,500	63,400
Second Quarter, 1982.....	65,900	63,500	64,000	47,350	61,000	57,000	62,500
Third Quarter, 1982.....	64,625	68,225	67,350	45,150	60,000	58,000	65,700
Fourth Quarter, 1982.....	66,100	65,825	65,900	43,950	60,000	55,000	64,600
Annual, 1982.....	66,100	65,000	65,500	47,025	59,725	57,000	64,325
First Quarter, 1983.....	65,950	65,000	65,200	46,400	60,000	55,000	64,150
Second Quarter, 1983.....	68,425	67,500	67,900	50,950	61,750	58,500	66,225
Third Quarter, 1983.....	71,650	69,525	70,000	52,450	61,000	58,000	68,500
Fourth Quarter, 1983.....	74,475	69,550	71,000	57,225	62,500	60,000	69,400
Annual, 1983.....	70,050	68,000	68,650	51,650	61,450	58,000	67,000
First Quarter, 1984.....	74,750	69,525	71,225	56,300	62,000	60,000	69,500
Second Quarter, 1984.....	75,875	70,500	72,000	62,950	65,000	64,000	70,450

	Single Family			Townhouse / Condominium			Grand Total
	New	Resale	Total	New	Resale	Total	
First Quarter, 1981.....	818	7,821	8,639	204	1,171	1,375	10,014
Second Quarter, 1981.....	717	10,204	10,921	161	1,579	1,740	12,661
Third Quarter, 1981.....	529	9,968	10,497	143	1,488	1,631	12,128
Fourth Quarter, 1981.....	341	7,013	7,354	106	1,020	1,126	8,480
Annual, 1981.....	2,405	35,006	37,411	614	5,258	5,872	43,283
First Quarter, 1982.....	429	4,888	5,317	152	987	1,139	6,456
Second Quarter, 1982.....	610	5,152	5,762	383	866	1,249	7,011
Third Quarter, 1982.....	1,260	7,136	8,396	373	1,095	1,468	9,864
Fourth Quarter, 1982.....	1,665	6,699	8,364	479	1,104	1,583	9,947
Annual, 1982.....	3,964	23,875	27,839	1,387	4,052	5,439	33,278
First Quarter, 1983.....	1,804	7,052	8,856	547	1,093	1,640	10,496
Second Quarter, 1983.....	2,457	8,766	11,223	687	1,056	2,193	13,416
Third Quarter, 1983.....	2,613	9,672	12,285	639	1,368	2,007	14,292
Fourth Quarter, 1983.....	2,684	8,151	10,835	668	1,091	1,759	12,594
Annual, 1983.....	9,558	33,641	43,199	2,541	5,058	7,599	50,798
First Quarter, 1984.....	2,552	8,520	11,072	694	1,216	1,910	12,982
Second Quarter, 1984.....	2,541	10,492	13,033	796	1,508	2,304	15,337

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

A Survey of Arizona Business Conditions

HAROLD FEARON

MAY

The Arizona economy expanded at a lively pace again in May, and the rate of growth was consistent with the April rate. New orders, production, and employment grew briskly, and inventories increased. Prices also rose but at a somewhat lower rate. Delivery times continued to lengthen. The current expansion, now in its 17th month, will strengthen throughout the balance of the year. Interest rates and prices will continue to increase, and the rate of growth will moderate somewhat during the second half of the year.

Now in its 22nd year of monthly reporting on the condition of the Arizona economy, the purchasing business survey gathers data through a questionnaire sent at the close of each month to purchasing managers throughout the state. They indicate the direction of activity — higher, unchanged, or lower — on seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace. Their aggregate readings have accurately charted the course of the economy over the past two decades and have provided data on turning points several weeks earlier than comparable government data.

Dr. Fearon is The National Association of Purchasing Management Professor in the College of Business, Arizona State University.

Prices

Prices paid for major purchased items continued to increase but at a somewhat lower rate than in April. While 45 percent of the purchasing managers paid higher prices in May than in April, 52 percent said prices were unchanged and only 3 percent reported they paid lower prices. The rate of price increases has been consistently high in each of the five months of 1984 and likely will continue to be high as the strong economic growth begins to put pressure on industry operating rates.

Delivery Time

Delivery time on shipments from vendors stretched for the 19th consecutive month, at a higher rate than in April and at the highest rate since January. Longer delivery times were reported by 49 percent of the firms, compared to only 3 percent that received faster service. The delivery time stretch-out reveals the amount of forward momentum present in the economy, as vendors are hard-pressed to meet delivery schedules.

Inventory Levels

Inventory levels moved up in May at a rate that has been consistent for each month of 1984. Thirty-eight percent of the firms added to purchased inventory, while 15 percent cut stocks. However, the inventory increases are in line with the growth rate and pose no immediate problem. Arizona firms have exercised close control over inventories during this expansion.

New Orders

New orders received from customers rose again, at the highest rate since last February. Fifty-one percent of the firms booked more new business in May than in April, which was more than four times the 12 percent that saw a decline in order receipts. The consistent increase in incoming business has been the driving force behind the economy's smooth upward movement.

Production

Production also increased, at about the same rate shown on the new order indicator. An increase was reported by 44 percent of the firms; only 9 percent cut back output. This was the 17th consecutive monthly production increase.

Employment

Employment was up, for the 16th month in a row, although at a somewhat lower rate than in April. Thirty-two percent of the firms added employees, which was four times the 8 percent that pared payrolls. Employment levels in Arizona are at a new high, and further increases will occur during the balance of the year.

Purchases

Purchases of materials and services continued to increase as needed to support the higher production level. The strong May increase (54 percent of the firms increased purchases; 13 percent reduced purchases) was about the same as recorded in April and continued to be a major factor in stimulating the economy.

Summary

The Arizona economy continued to enjoy a very strong growth rate. All economic indicators signalled further upward movement during the second half of 1984. The only negative note was the upward price trend.

Table 1 presents the May purchasing survey, comparing activity in May with the previous month.

TABLE 1
MAY PURCHASING SURVEY

Key Indicators	Percent of Purchasing Managers Indicating Each Response (May compared to April)		
	Higher	Same	Lower
Prices paid for major commodities	45	52	3
Delivery time from vendors	49	48	3
Purchased materials inventory level	38	47	15
New orders received	51	37	12
Production	44	47	9
Employment	32	60	8
Purchases	54	33	13

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

JUNE

The expansion continued in June, with all indicators of economic performance advancing. Prices also rose, at a rate consistent with the first five months of 1984. However, the growth rate definitely slowed — all indicators advanced at a slower pace in June than in May. The June figures probably foreshadow a slight pause in the very strong growth rate of the past several months.

The current expansion, now in its 18th month, will continue during the balance of the year. The higher interest rates will take some pressure off the upswing, and a more moderate and sustainable growth curve will be evident in the second half of 1984. The danger of moving to a much higher inflation rate continues, but a slowing of the expansion will moderate these pressures.

Prices

Prices paid for major purchased items continued to increase at the same rate as in May. This indicator has shown a very consistent increase over each of the first six months of 1984. Forty-five percent of the purchasing managers paid higher prices in June than in May; only 2 percent enjoyed lower prices, and 53 percent said prices were unchanged. Although the price increase rate continued to be uncomfortably high, it didn't show signs of heating up further. If overall growth continues to slow in the months immediately ahead, prices should remain under reasonable control.

Delivery Time

Delivery time on shipments from vendors extended further, as vendors received more new orders than they could handle comfortably. Yet, the June lengthening of delivery time was the smallest registered in the past year (since June 1983), with 44 percent saying deliveries were slower and 10 percent enjoying faster delivery service.

Inventory Levels

Inventory levels of purchased materials increased again but at the lowest rate since November 1983. While 34 percent of the firms added to stocks, 20 percent cut their inventory. Arizona firms have controlled inventories well throughout this economic expansion, a major factor in the strength and consistency of this upswing.

New Orders

New orders received from customers advanced again in June, but the increase was the smallest since November 1983, a definite indication that the pace of growth is moderating. New orders still are very healthy, however, with 44 percent of the firms booking more new business in June than in May, compared to the much smaller 17 percent that saw their order books shrink. This was the 18th consecutive month of new order growth.

Production

Production continued to increase in June, but the growth rate slowed a bit, in line with new orders. The increase rate was the smallest in the last three months. Higher production was reported by 39 percent of the firms, while 14 percent cut output.

Employment

Employment advanced again in June, for the 17th month in a row, although at the smallest rate since January. Twenty-six percent of the firms added to their work force, which was three times the 9 percent that pared payrolls. The number of people employed in Arizona has expanded dramatically during this recovery, and further advances will take place during the balance of the year.

Purchases

Purchases of materials and services went up in June, but the rate of increase was the smallest yet over the sixteen months since March 1983, when this economic indicator was first included in the survey. Forty-seven percent of the firms increased purchases, compared to 21 percent that scaled back their purchase commitments. The moderating purchase order rate is caused by the slowing in new order and production advances and is a good indicator that overall economic growth likely will move at a somewhat slower pace in the second half of the year.

Summary

Economic growth in Arizona was strong in June, as the economy reached for new, higher levels. The rate of growth is slowing, and the balance of the year likely will see a further moderation in the pace of expansion.

Table 2 presents the June purchasing survey results.

TABLE 2
JUNE PURCHASING SURVEY

Key Indicators	Percent of Purchasing Managers Indicating Each Response (June compared to May)		
	Higher	Same	Lower
Prices paid for major commodities	45	53	2
Delivery time from vendors	44	46	10
Purchased materials inventory level	34	46	20
New orders received	44	39	17
Production	39	47	14
Employment	26	65	9
Purchases	47	32	21

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

JULY

The Arizona economy enjoyed the best of both worlds in July — continued growth and a declining inflation rate — as the major and uninterrupted upswing moved into the last half of its second year. The rate of advance for new orders received, production, purchase commitments, and employment turned in another up-beat performance, although the rate of growth has moderated somewhat over the summer months.

The more modest growth rate of the past two months will continue during the balance of the year and likely will extend the expansion well into 1985 and perhaps beyond. Inflation shows no sign of heating up and probably will stay at a moderate level for the next several months. The somewhat lower growth curve has removed many of the upward price pressures.

Prices

Prices paid for major purchased items advanced, but the rate of increase slowed to the lowest level in more than a year (since April 1983); the rate was approximately half the June increase rate. Thirty-three percent of the purchasing managers paid higher prices in July than in June; 8 percent paid lower prices, while a large 59 percent said prices were unchanged. The rate of inflation has definitely slowed over the past few months, a trend that should hold for the balance of the year.

Delivery Time

Delivery time on shipments from vendors continued to lengthen, at about the same rate as in June. A stretch-out in delivery performance was reported by 44 percent of the purchasing managers, about seven times the 6 percent who received faster deliveries. This expansion has raised output to the point where capacity limits now are creating major delivery problems.

Inventory Levels

Inventory levels remained flat in July, for the first time since early 1983 (February and March). The number of firms that increased inventory (30 percent) was almost offset by those that cut stocks (29 percent). This may be due to difficulties in obtaining shipments from vendors, caused by the lengthening lead times, and to the use by firms of more advanced systems of monitoring and controlling inventory. In any event, there is no present danger that the expansion will be cut short by an excessive inventory overhang.

New Orders

New orders continued to grow but at a rate slightly less than that of the previous month. Forty-one percent of the firms booked more new business in July than in

June, which was more than twice the 17 percent that saw their order books shrink. The new order growth rate, while still very healthy, has moderated somewhat during the past five months as the expansion, now in its second year, reaches the mature stage.

Production

Production increased in July, keeping pace with new order growth. Higher output was reported by 39 percent of the firms, compared to 13 percent that cut output. The increase rate was the same as in June and lower than the rate in all but two months so far this year. Even though the increases in production are slowing, the Arizona economy still is performing at a very high level.

Employment

Employment increased for the 18th consecutive month, at a slightly higher rate than in June. Thirty-three percent of the firms added employees in July, while only 13 percent found it necessary to cut payrolls. Employment should continue strong for the balance of the year, as Arizona firms build production to cope with their incoming order flow.

Purchases

Purchases of materials and services continued strong, at the June rate. An increase in purchase commitments was reported by 47 percent of the firms, more than twice the 22 percent that scaled back their buying. The strong increase rate of purchase commitments has provided a major impetus for this economic expansion.

Summary

The current expansion now has surpassed any since the early 1970s. Although growth normally slows in the second year of an expansion, this one now is in its 19th month. Thus, the easing in the growth rate seen in both June and July is normal. The Arizona economy is operating at a high rate of activity and continuing to enjoy significant, although not record, growth in new orders, production, purchase commitments, and employment. This activity level should continue throughout 1984.

Table 3 presents the July survey results.

TABLE 3
JULY PURCHASING SURVEY

Key Indicators	Percent of Purchasing Managers Indicating Each Response (July compared to June)		
	Higher	Same	Lower
Prices paid for major commodities	33	59	8
Delivery time from vendors	44	50	6
Purchased materials inventory level	30	41	29
New orders received	41	42	17
Production	39	48	13
Employment	33	54	13
Purchases	47	31	22

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

AUGUST

Some of the bounce went out of the expansion in August, but all of the indicators remained positive, extending the expansion that began early in 1983 (19 months ago). The rate of increase softened on such key indicators as vendor lead times, new orders received, production, employment, and purchase commitments. However, August still was a good economic month, with solid, if more modest, gains recorded.

This definite slowing in the growth rate will continue for the balance of the year. Yet, the Arizona economy exhibits good, underlying strength, and there are no signs of a shutdown of the expansion — only a more modest, less hectic extension of the upward pace. Prices and inventory levels are well under control, and the expansion should proceed relatively smoothly into 1985.

Prices

Prices paid for major purchased items went up again in August, but the rate of increase was the lowest since April 1983 (17 months ago) when the economy was pulling out of the recession. Thirty-three percent of the purchasing managers paid higher prices in August than in July; 9 percent paid lower prices; and a large 58 percent said prices were unchanged. The relatively low rate of price increases during the past few months and the more moderate growth rate make an early return to the high inflation rates of prior years unlikely.

Delivery Time

Delivery time on shipments from vendors extended a bit further but at the lowest monthly increase rate since April 1983. Longer vendor lead times were reported by 33 percent of the firms, while 8 percent said delivery times were shorter. This reduction in the rate at which vendor lead times are lengthening is a good indicator that the Arizona economy is growing at a slower pace as vendors catch up with their order backlogs.

Inventory Levels

Inventory levels increased slightly for the second month in a row. The 25 percent of firms that added to inventory was almost balanced by the 21 percent that cut stocks. The lower overall growth rate tempers the need to build stocks, and the elimination of inventory additions means that stock building is no longer fueling the economic expansion.

New Orders

New orders received from customers increased again in August, for the 20th consecutive month, but at the lowest rate since January 1983, when the recovery began. Still, the 40 percent of the firms that booked more new business in August than in July was twice the 20 percent that saw their order books shrink. A further indication that the growth rate is slowing is that the rate of increase in new orders has become progressively smaller in each of the past four months.

Production

Production increased again, following the rise in new orders, but the increase rate also was the lowest since January 1983. It has grown at a slower rate each of the past four months. Higher output was reported by 35 percent of the firms; 20 percent reduced operating rates.

Employment

Employment still is growing, but the August increase was only half that of July and the lowest since January 1983. Twenty-six percent of the Arizona firms added to their work force, compared to 15 percent that pared payrolls. August was the 19th consecutive month of employment additions, which shows the strength and duration of the 1983-84 economic recovery.

Purchases

Purchases of materials, supplies, and services by Arizona firms continued to grow but at the lowest rate since this data series was started in March 1983. Thirty-nine percent increased their purchase commitments; 20 percent scaled back their buying. The monthly increase rate on this indicator started slowing in April and has gotten progressively smaller during each succeeding month.

Table 4 presents the August survey results.

TABLE 4
AUGUST PURCHASING SURVEY

<i>Key Indicators</i>	<i>Percent of Purchasing Managers Indicating Each Response (August compared to July)</i>		
	<i>Higher</i>	<i>Same</i>	<i>Lower</i>
Prices paid for major commodities	33	58	9
Delivery time from vendors	33	59	8
Purchased materials inventory level	25	54	21
New orders received	40	40	20
Production	35	45	20
Employment	26	59	15
Purchases	39	41	20

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

Arizona Gross State Product

First Quarter, 1984

TOM R. REX

The Arizona economy continued its strong recovery from the 1981-82 recession during the first quarter, with the Arizona Gross State Product (GSP) rising at an inflation-adjusted annual rate of 17.6 percent. This fourth consecutive, double-digit quarterly increase (see Table 1) pushed the annualized GSP, not inflation-adjusted, to \$40 billion (see Table 2).

Often referred to as "value added," GSP is the value of production minus purchases of intermediate goods and services. The Arizona GSP is compiled quarterly and annually by the Bureau of Business and Economic Research in the College of Business, Arizona State University, in cosponsorship with the College of Business Dean's Council of 100. For more information, see the Second Quarter, 1984, issue of *Arizona Business*, page 3.

The first quarter GSP growth greatly outpaced that of the Gross National Product (10.1 percent). Since 1960, the GSP and the GNP have posted quarterly growth rates in excess of the first quarter, 1984, rate only four times each. The first quarter GSP gain was led by the finance, insurance, and real estate sector, which experienced the most rapid growth in its history. Other sectors that grew very rapidly include agriculture, for the second consecutive quarter, and the highly cyclical construction industry. In contrast, the GSP of the government sector remained flat, while the mining GSP declined.

Much of the surge in inflation-adjusted GSP was caused by an increase in the productivity of Arizona workers. Output per employee in inflation-adjusted dollars rose at an annualized rate of 11.2 percent during the first quarter, the fourth gain in the last five quarters. The construction sector and the finance, insurance, and real estate sector showed the largest gains in output per employee. Nationally, productivity of workers increased only 2.9 percent during the first quarter.

The inflation-adjusted GSP is estimated to have grown 13 percent during the second quarter, compared to a gain of 7.5 percent in the Gross National Product. The annual average growth in GSP for 1984 is forecast to be 14 percent, which would place 1984 as the best year ever for the Arizona economy.

TABLE 1
PERCENT CHANGE
IN ARIZONA GROSS STATE PRODUCT
AT ANNUAL RATE ADJUSTED FOR INFLATION

Quarter	1981	1982	1983	1984
First	13.7	-10.1	6.6	17.6
Second	6.4	-0.8	17.6	
Third	12.7	-5.9	14.7	
Fourth	-0.7	-6.0	14.1	

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 2
ARIZONA QUARTERLY GROSS STATE PRODUCT, AT ANNUAL RATE
(In Billions of Current Dollars)

				Transportation, Communication,			Finance, Insurance, Real Estate		Govern- ment	Total
1983	Agriculture	Mining	Construc- tion	Manu- facturing	Public Utilities	Trade		Services		
1st Qtr . . .	1.017	1.259	2.034	5.295	2.621	5.690	5.736	5.196	4.921	33.769
2nd Qtr . . .	1.053	1.327	2.238	5.672	2.882	5.953	6.027	5.390	4.886	35.429
3rd Qtr . . .	1.054	1.519	2.417	6.064	2.951	6.157	6.160	5.527	5.234	37.083
4th Qtr . . .	1.238	1.625	2.457	6.204	3.120	6.332	6.262	5.751	5.397	38.385
1984										
1st Qtr . . .	1.440	1.572	2.662	6.496	3.270	6.548	6.519	6.000	5.538	40.046

All data in this series are revised quarterly.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

Arizona Business Scene



Demographics of the Urban Southwest

TOM R. REX



The American Southwest is a region of open spaces dotted by rapidly growing metropolitan centers. Despite the great distances that separate these urban areas, common historical and cultural features continue to set them apart from the rest of the United States. This article compares the demographics of Arizona's major metropolitan centers with those of comparable urban areas in the region and contrasts them to the national profile, using 1980 Census data. Each city reference in this article implies the entire urban area.

General Characteristics

In the Southwest, Phoenix, Denver, and San Diego have comparable populations, as do Tucson, Albuquerque, El Paso, and Las Vegas (see Table 1). Each of these seven urban areas is growing much more rapidly than the nation as a whole. The rapid population growth of Phoenix and Tucson between 1970 and 1980 was exceeded by the growth of Las Vegas, a city that could soon surpass Tucson in size.

The racial/ethnic composition of the Southwest, compared to the nation, includes a much greater proportion of Hispanics but a smaller proportion of Blacks. Only Las Vegas has a racial distribution near the national average of 6 percent Hispanic and 12 percent Black.

Southwestern residents are slightly younger than the national population, with a median age between 28 and 30 years in each urban area except El Paso, where the median age is a very young 25 years. While the me-

dian age in Phoenix and Tucson is less than 30 years, Arizona's metropolitan centers have far more retirees than other Southwestern urban areas: 12 percent of the population, approximately the same as the national proportion.

Married couples make up more than 80 percent of the families in each urban area, with the highest proportions in Phoenix and Tucson. Approximately one-half of the families throughout the Southwest have children living at home, but Phoenix and Tucson have the lowest proportions. In El Paso, 60 percent of the families have children living at home, which is reflected in its average household size of 3.3 people. This number is greater than the 2.6 to 2.7 people per household of other urban areas in the region and in the nation as a whole. Families, defined as at least two related people living together, constitute roughly 70 percent of all households, except in El Paso, where the proportion is more than 80 percent.

Most Southwestern urban areas are in line with the national proportion of working mothers: 46 percent of women with a child less than 6 years and 63 percent of women with a child between 6 and 17 years. The proportion of working mothers is higher in Las Vegas and lower in El Paso.

Social Characteristics

Less than one-half of the residents of each Southwestern urban area were born in their 1980 state

TABLE 1
SOUTHWESTERN URBAN AREAS
SUMMARY OF CHARACTERISTICS, 1980

	Phoenix	Denver	San Diego	Tucson	Albuquerque	El Paso	Las Vegas	United States
Population (000)	1,409	1,352	1,703	451	418	454	433	226,546
Population Growth								
Since 1970 (%)	63	29	42	33	41	35	70	12
Spanish Origin (%)	13	12	15	22	37	62	8	6
Born in State of								
Residence (%)	28	41	36	30	47	50	18	64
Attended College (%)	41	46	45	42	43	31	33	32
Median Family Income, 1979 (\$000)	21	23	20	19	19	15	21	20
Employed by								
Government (%)	15	16	19	22	22	21	13	17

Source: U.S. Bureau of the Census, *Census of Population and Housing, 1980: Summary Tape File 3C*.

of residence, compared with a national figure of 64 percent. Las Vegas has the fewest lifetime residents — less than 20 percent; in Phoenix and Tucson, the proportion is approximately 30 percent. El Paso and San Diego have large proportions of foreign-born residents.

In part due to the in-migration of people to the Southwest, residents of the region move more frequently than their national counterparts, 46 percent of whom had changed residence between 1975 and 1980. In Las Vegas, 66 percent of the 1980 residents had moved since 1975, with many coming from the Western United States. In Phoenix and Tucson, approximately 60 percent of the 1980 residents had moved since 1975. A relatively large number of people in Arizona's urban areas had moved from the nation's North-central and Northeast regions.

The Southwest has a more highly educated populace than the nation as a whole. More than 40 percent of residents older than 25 years have at least attended college. El Paso, however, with a large proportion of residents who have only an elementary school education, and Las Vegas, with a large proportion of high school educated, have an educational attainment level the same as the national average. Adults in Phoenix and Tucson have slightly less education than those in Denver, San Diego, and Albuquerque.

Economic Characteristics

Nationally, approximately 75 percent of males and 50 percent of females at least 16 years old are employed. The Southwest's labor force participation rates are

slightly higher. In Denver and Las Vegas, for example, more than 80 percent of the males and nearly 60 percent of the females are in the work force. Tucson has relatively low participation rates: 72 percent of males and 48 percent of females.

Compared to the nation as a whole, most of the Southwest has a greater proportion of workers in occupations classified as managerial, professional, technical, sales, and administrative support. Las Vegas is the primary exception, with more than twice as many service workers as the other urban areas. El Paso comes closest to the national occupational distribution, with a large proportion of operators, fabricators and laborers.

Employment by government in the Southwest ranges from below the national average in Las Vegas — 13 percent of all workers — to above the national average in Tucson and Albuquerque — 22 percent of the work force. Phoenix has the lowest proportion of federal government workers, while Tucson has the highest proportion of state government workers.

The Southwest's industrial structure is much different from that of the nation, as reflected in employment-by-industry figures (Table 2). The region is less dependent on manufacturing: Phoenix and El Paso have the highest employment by this industry, 18-to-19 percent of the work force, still below the nation's 22 percent. The region has relatively more employment in the construction, trade, and services industries, and in the finance, insurance, and real estate industry. Las Vegas is unique, with one-half of its employment in the services industry and only 4 percent in manufacturing.

TABLE 2
SOUTHWESTERN URBAN AREAS
EMPLOYMENT BY INDUSTRY, 1980
(Percent of Total Employment, 16 Years and Older)

	Phoenix	Denver	San Diego	Tucson	Albuquerque	El Paso	Las Vegas	United States
Agriculture, Forestry, Fisheries, Mining . . .	2	3	2	6	2	1	1	4
Construction	8	7	6	8	7	6	8	6
Manufacturing	18	15	17	10	9	19	4	22
Transportation, Communication, Public Utilities	7	9	6	6	7	9	7	7
Trade	23	22	22	23	23	23	19	20
Finance, Insurance, Real Estate	8	8	7	6	7	6	6	6
Services	29	29	33	36	36	29	50	29
Public Administration . .	5	6	7	5	8	7	5	5

Source: U.S. Bureau of the Census, *Census of Population and Housing, 1980: Summary Tape File 3C*.

People in the Southwest commute to work primarily by driving alone: The proportion is greater than the nation's 64 percent in all urban areas except San Diego. Carpooling is slightly less popular than it is nationally. Only Denver has as many riders of public transportation as the national average (6 percent of all workers). San

Diego has an unusually large number of people who walk to work (9 percent).

The median family income is highest in Denver, followed by Phoenix and Las Vegas. The other urban areas are at or below the national average.

Metropolitan Phoenix Consumer Price Index

Second Quarter, 1984

TOM R. REX

Prices of goods and services in the Phoenix metropolitan area rose 1.5 percent during the second quarter, 1984, an increase slightly less than that of the previous quarter (see Table 1). The index for all items, 180.1 on a 1977 = 100 base, is 5.6 percent higher than it was one year ago.

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Bureau of Business and Economic Research, College of Business, Arizona State University. The quarterly CPI results from comprehensive surveys conducted by the Bureau in cooperative cosponsorship with Valley National Bank.

Three items were responsible for 80 percent of the second quarter advance. Piped gas and electricity costs caused 40 percent of the total increase, rising 15.0 percent, due to a piped gas rate increase and the switch to summer electricity rates. Used car prices again posted a large gain, 5.8 percent, and gasoline prices rose 5.9 percent.

Food and Beverages

Price increases for food and beverages returned to a modest pace during the second quarter, after a larger gain the preceding quarter. Prices of grocery store items rose only 0.5 percent and prices of alcoholic beverages declined, but food away from home price gains were larger (see Table 2).

The advance in the food at home category was led by increases between 1 percent and 2 percent in dairy products, cereal and bakery products, and other food at home. A large, seasonal increase in fresh fruit prices was offset by a comparable seasonal decline in fresh vegetable prices, helping to hold the gain in the fruits and vegetables category to just 0.2 percent. The index for meats, poultry, fish, and eggs declined because of lower prices in all groups except fish and seafood, which experienced the largest increase in at least six years (6.7 percent). The price of eggs fell, after three successive quarters of large gains, but remained 23.1 percent higher than the price of one year ago.

Housing

Housing costs recorded the largest gain in more than two years during the second quarter, primarily caused by the jump in piped gas and electricity rates. Declines in other fuels and in other utilities helped to moderate the advance in the fuel and other utilities category.

Gains in the other major housing categories were small. Homeowners' costs rose only 1.1 percent, although this was the largest climb in the last year. Renters' costs, which increased just 0.4 percent, returned to the prior pattern of small quarterly advances, following a large jump last quarter. The index for household furnishings and operations was unchanged in the second quarter and was below the level of one year ago.

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

Expenditure Category	Relative Importance	Percent Change from Preceding Quarter					
		1st 1983	2nd 1983	3rd 1983	4th 1983	1st 1984	2nd 1984
ALL ITEMS.....	100.0	0.2	1.7	1.6	0.5	1.9	1.5
Food and Beverages.....	19.0	2.3	1.5	-0.1	0.4	1.8	0.7
Housing.....	38.9	-0.5	1.8	0.9	-0.2	0.6	2.0
Apparel and Upkeep.....	4.8	0.6	1.8	1.0	1.7	2.5	-1.3
Transportation.....	21.9	-1.9	2.5	3.3	0.5	1.6	2.3
Medical Care.....	6.6	3.0	1.0	4.7	2.0	11.4	1.1
Entertainment.....	4.6	1.7	-2.1	-0.2	2.9	1.1	2.3
Other Goods and Services.....	4.2	2.6	2.7	4.7	0.5	0.8	1.1

Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank.

Transportation

Transportation costs continued to accelerate during the second quarter, due to the boost in gasoline prices, which followed two quarters of decline, and to continued large gains in used car prices, which are now 23.0 percent higher than they were one year ago. Lower prices for several items helped to moderate the overall gain in the transportation index. Prices of vehicle parts and equipment declined for the fifth successive quarter. Maintenance and repair costs, public transportation costs, and vehicle finance charges all declined in the second quarter, the latter for the seventh time in the last nine quarters.

Medical Care

The pattern of alternating quarters of large and small advances in the medical care index continued, with a modest 1.1 percent gain during the second quarter, after a record first quarter increase. Health insurance premiums rose an additional 3.4 percent during the second quarter to a level more than 50 percent higher than that of one year ago. Hospital costs increased minimally, while fees for professional services fell slightly.

Other Categories

The index for entertainment climbed 2.3 percent during the second quarter, an unseasonably large increase caused by a double-digit boost in the index for

toys and hobbies. The index for apparel and upkeep declined, with lower prices observed for all items except women's and girls' apparel. The other goods and services category recorded its third consecutive modest gain.

Comparison Areas

The second quarter inflation rate in the Phoenix metropolitan area was once again higher than the national average. The Phoenix area experienced greater cost increases in all categories except apparel and upkeep.

As illustrated by the comparisons from one year ago (see Table 3), these larger increases in the Phoenix area are comparable to those in San Diego, which also had inflation greater than the national average during the last year. The Phoenix area's inflation since second quarter, 1983, has been generally comparable to that of the comparison areas, except in the medical care category: Inflation in medical care costs in the Phoenix area has been at least triple that of each of the comparison areas.

Outlook

The inflation rate has temporarily stabilized near 4.5 percent nationally and near 5.5 percent in the Phoenix metropolitan area. The rate is likely to remain stable for at least one more quarter. However, many analysts foresee slightly higher inflation beginning in late 1984.

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
SECOND QUARTER, 1984
(1977 = 100)

<i>Expenditure Category</i>	<i>Last Qtr. Index</i>	<i>This Qtr. Index</i>	<i>Percent Change</i>	<i>Year-Ago Change</i>
ALL ITEMS.....	177.4	180.1	1.5	5.6
Food and Beverages.....	162.9	164.1	0.7	2.8
Food.....	163.5	165.0	0.9	3.0
Food at Home.....	161.9	162.8	0.5	2.6
Cereal and Bakery Products.....	169.1	171.8	1.6	4.6
Meats, Poultry, Fish, and Eggs.....	157.4	156.1	-0.8	0.1
Dairy Products.....	153.2	156.0	1.8	3.0
Fruits and Vegetables.....	170.9	171.2	0.2	3.7
Other Food at Home.....	151.2	152.8	1.1	3.5
Food Away from Home.....	163.9	166.5	1.6	3.7
Housing.....	185.0	188.7	2.0	3.4
Shelter.....	198.4	199.8	0.7	3.2
Renters' Costs**.....	106.2	106.6	0.4	6.6
Homeowners' Costs**.....	100.8	101.9	1.1	1.9
Fuel and Other Utilities.....	159.6	174.3	9.2	9.0
Gas (piped) & Electricity.....	171.2	196.9	15.0	9.2
Household Furnishings and Operations.....	142.7	142.7	0.0	-0.8
Apparel and Upkeep.....	141.9	140.0	-1.3	3.8
Transportation.....	173.4	177.4	2.3	7.9
Private Transportation.....	170.4	174.8	2.6	8.0
New and Used Cars.....	178.3	185.5	4.0	16.3
Motor Fuels.....	189.9	201.1	5.9	4.4
Public Transportation.....	224.6	221.5	-1.4	6.5
Medical Care.....	224.5	226.9	1.1	20.1
Entertainment.....	163.6	167.3	2.3	6.1
Other Goods and Services.....	159.0	160.8	1.1	7.2

An ** indicates that the base period is second quarter, 1983.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
SECOND QUARTER, 1984

Expenditure Category	Percent Change from Last Quarter		Percent Change from One Year Ago			
	Phoenix	United States	Phoenix	United States	Denver	San Diego
ALL ITEMS.....	1.5	1.0	5.6	4.2	3.4	6.5
Food and Beverages.....	0.7	-0.2	2.8	3.0	3.7	3.1
Housing.....	2.0	1.1	3.4	4.0	1.9	7.6
Apparel and Upkeep.....	-1.3	1.4	3.8	1.4	2.5	5.4
Transportation.....	2.3	2.1	7.9	5.4	4.5	8.5
Medical Care.....	1.1	1.0	20.1	6.4	5.7	5.6
Entertainment.....	2.3	0.8	6.1	3.6	3.4	1.2
Other Goods and Services.....	1.1	0.6	7.2	6.9	9.1	8.9

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank; other data from U.S. Department of Labor, Bureau of Labor Statistics.

ARIZONA SALES OF ELECTRICAL POWER
(In Millions of Kilowatt Hours)

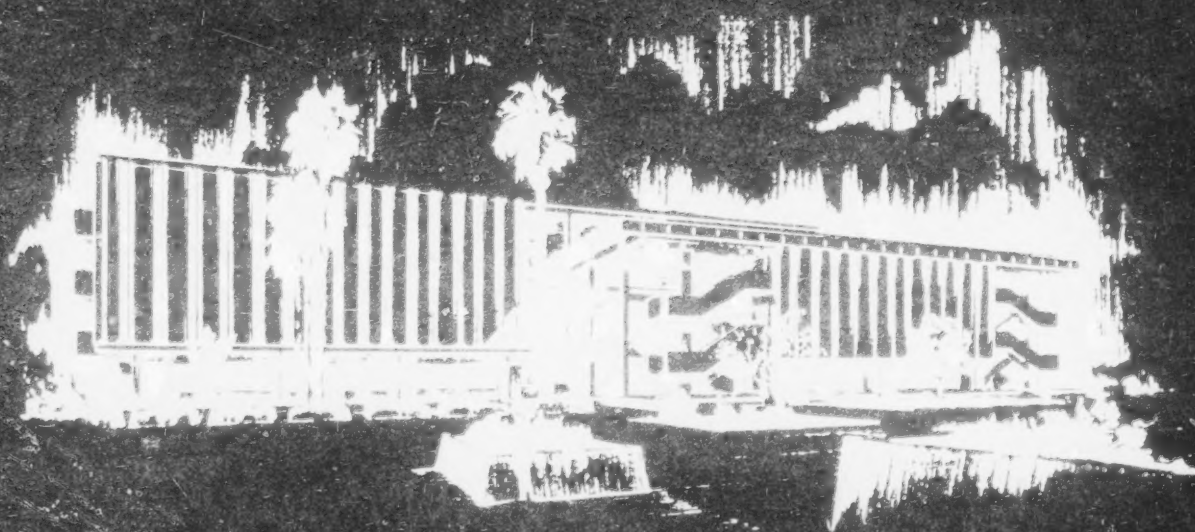
	1984	1983	Percent Change From Prior Year	Percent Change From Prior Month
January.....	2511.9	2193.2	+ 14.5%	+ 2.5%
February.....	2306.7	2085.2	+ 10.6	- 8.2
March.....	2376.1	2202.6	+ 7.9	+ 3.0
April.....	2351.6	2150.0	+ 9.4	- 1.0
May.....	2985.9	2345.0	+ 27.3	+ 27.0
June.....	3161.2	2834.5	+ 11.5	+ 5.9
July.....	3635.0	3350.6	+ 8.5	+ 15.0

Source: Arizona Power Authority (based on reports from major suppliers).

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Fourth Quarter, 1984

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Report to the Reader

Arizona Business is about to undergo a transformation in format, content and frequency of issue. The changes will reflect feedback received by the Bureau of Business and Economic Research last June, when we randomly selected 900 of our 7,200 readers to participate in a readership survey. The objective of the survey was to ascertain areas in which *Arizona Business* might be improved to make it maximally useful to readers.

A high 25 percent of the sample completed and returned our questionnaire. We discovered that nearly 70 percent of the respondents hold management positions. They are highly educated (75 percent have a college degree, and 50 percent have done post-graduate work) and well-read (87 percent read at least two other professional publications).

Our readers indicated that they desire more timely data than we are able to provide with the current quarterly frequency of issue. Therefore, beginning in March, 1985, we will publish *Arizona Business* on a monthly basis. In order to accomplish this under existing budget constraints, we will change the page count from an average of 40 to an average of 12. Such a page reduction will necessitate shorter articles, a change that will please those respondents who said the publication is too "academic" or "dry," with feature articles too long or detailed. On the whole, however, readers rated *Arizona Business* readability highly (1.8 on a scale of 1 = easy-to-understand to 5 = difficult-to-understand).

Survey results, along with several cross-tabulations, revealed that our readers fall into two main categories: (1) those with rather narrow interests who receive *Arizona Business* primarily for real estate information and, to a lesser extent, for the CPI, and (2) those with broader interests who receive the publication more for its articles than for its ongoing studies. Within the limited page count of the new format, we will attempt to satisfy both types of reader.

Finally, survey respondents have a clear interest in forecasts and projections. Of the Bureau's nine new or proposed data series, those receiving the highest ratings were: Arizona Economic Forecast, Arizona Real Estate Forecast, and Arizona Index of Leading Indicators. Demographic profiles are also of considerable interest. Reports on each of these areas will be included on a regular basis under our new format. Not to keep our readers waiting, however, we begin coverage of your three major areas of interest in this fourth quarter issue, by highlighting them in our three major feature articles.

The Survey of Arizona Business Conditions as a Leading Economic Indicator

HAROLD FEARON
TOM R. REX

The national and Arizona economies each follow a cycle, generally four or five years in length, in which high levels of economic activity (expansions) are followed by declines in activity (recessions). While the timing of the Arizona cycle closely corresponds to that of the national cycle, the level of activity in Arizona is typically more pronounced. The Arizona economy declines more steeply than the national economy during severe recessions, while expansions tend to be more vigorous in Arizona than on the national level. The timing of the economic cycle, particularly the "turning point" from an expansionary period to a recessionary period, is of particular importance.

A slowdown in both the national and Arizona economies has begun during the latter half of 1984, according to the six declining indicators of Harold Fearon's monthly survey of Arizona purchasing managers. This article analyzes the performance of the survey's indicators, both in forecasting Arizona economic activity and as leading indicators for the national economy.

Dr. Fearon is the National Association of Purchasing Management Professor in the College of Business at Arizona State University. Tom R. Rex is Manager of Research Support for the Bureau of Business and Economic Research in the ASU College of Business.

Analysts review a variety of economic measures in order to predict these turning points. Twelve national measures have been formally combined into a monthly Index of Leading Economic Indicators by the U.S. Department of Commerce. Three successive months of decline in this index generally signal an impending recession or a substantial slowdown in the economic expansion.

A specific index of leading indicators for Arizona does not exist, although such an index is currently under development by the Bureau of Business and Economic Research in the College of Business at ASU. However, several highly reliable leading indicators for Arizona regularly outperform the national indicators. They are the key indicators of the monthly survey of Arizona-based purchasing managers, conducted through the ASU College of Business since September 1962.

This article analyzes the performance of the purchasing survey's indicators in forecasting Arizona economic activity. Because the timing of the Arizona and national economic cycles is nearly identical, the authors also assess the survey's key indicators as leading indicators of the national economy.

EVOLUTION OF THE PURCHASING SURVEY

Until 1980, the survey group comprised members of the Purchasing Management Association of Arizona. However, since formation of the Purchasing Management Association of Southern Arizona, survey

data have been obtained from both state associations, which encompass all geographic areas of Arizona. The questionnaire is distributed at the end of each month and asks purchasing managers to indicate the direction of activity for that month — higher, unchanged, or lower — on seven measures of economic activity. These purchasing managers represent nearly all sectors of the Arizona economy and deal daily with supply, demand, and price factors in the marketplace. Their aggregate responses have accurately charted the state's economic course for two decades.

Work is currently underway on a faster data reporting system that uses a computer-based methodology for data gathering. Respondents will receive the survey questions over their microcomputer, which is linked to a national telecommunications system called EIES (Electronic Information Exchange System), operated by the New Jersey Institute of Technology. Respondents then will use their computers to provide answers on the direction of change of each indicator.

Pilot tests on collection of the Arizona data were successfully conducted during March and April 1984. Procedures now are being developed to convert the entire Arizona data collection system to the new methodology early in 1985. In addition, a pilot test will be conducted to collect national data, with respondents from the National Association of Purchasing Management using the new telecommunications methodology. This should make the data and the resulting analysis even more timely.

METHODOLOGY FOR ANALYZING PURCHASING SURVEY INDICATORS

Six of the seven purchasing survey indicators were included in this analysis. The seventh, purchases, was added to the survey in March 1983; thus, it was not included in the study since data must be collected for at least one full cycle before its predictive value can be authenticated. The six indicators are:

- prices paid for major commodities
- delivery time from vendors
- purchased materials inventory level
- new orders received
- production
- employment

Data prior to the late 1960s were excluded from the time series of these six indicators because no significant cyclical turning points occurred during this period. The data included in this analysis span more than four economic cycles.

While the "raw" data reported monthly — the percentage of respondents indicating higher, unchanged, or lower activity — are sufficient to provide an indication of economic conditions, it is easier to use one set of data for each of the six indicators: the difference between the percentage of respondents indicating higher activity and the percentage of respondents indicating lower activity. This is referred to as a monthly change index. Since month-to-month fluctuations as well as a seasonal pattern are apparent in the time series for each of the six indicators, each series was seasonally-adjusted and converted to a three-month moving average. The result is six easy-to-interpret, highly accurate indicators of the Arizona economy and, coincidentally, of the national economy. Graphs of each of the six series, compared to the Arizona Gross State Product and to the turning points in the national economy, are presented in Figure 1.

THE SIX TIME SERIES

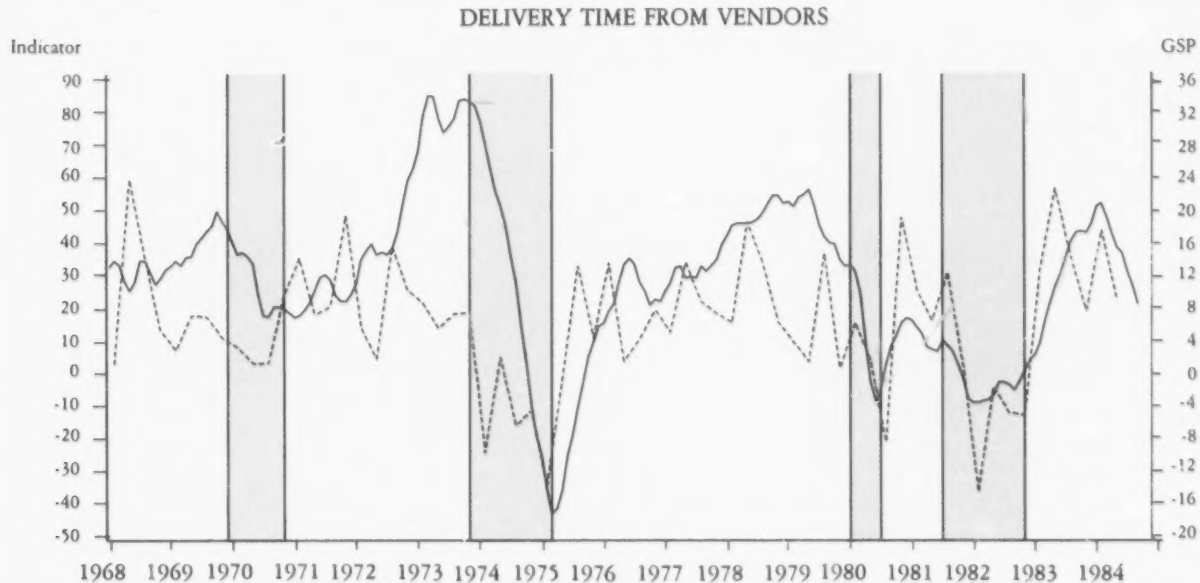
Each of the six seasonally-adjusted moving averages follows a cyclical pattern similar to that of the national and Arizona economies. However, the turning points of each of the six series precede the turning points of the overall economy. Typical peak and trough values for each of the six series, as well as the number of months that the peak value precedes the beginning of the recession and the number of months that the trough value precedes the beginning of the recovery, are summarized in Table 1.

The indicators for production and for new orders received deserve particular attention, since they provide the longest lead times — slightly more than one year, on average — preceding recessions. Employment is also an important leading indicator, only slightly less sensitive than production and new orders. For each indicator, the number of months by which it foreshadows a recovery is less than the number of months by which it foresees a recession. The inventory and price indicators are the slowest in signaling recovery.

Interpreting the Indicators

While the magnitude of an indicator helps to identify peak and trough values, it must be interpreted with caution: The indicators generally still have a highly positive value at the beginning of a recession, although the level is steadily declining. In like manner, the indicators are usually still negative at the beginning of a recovery, although the value is approaching zero. Thus,

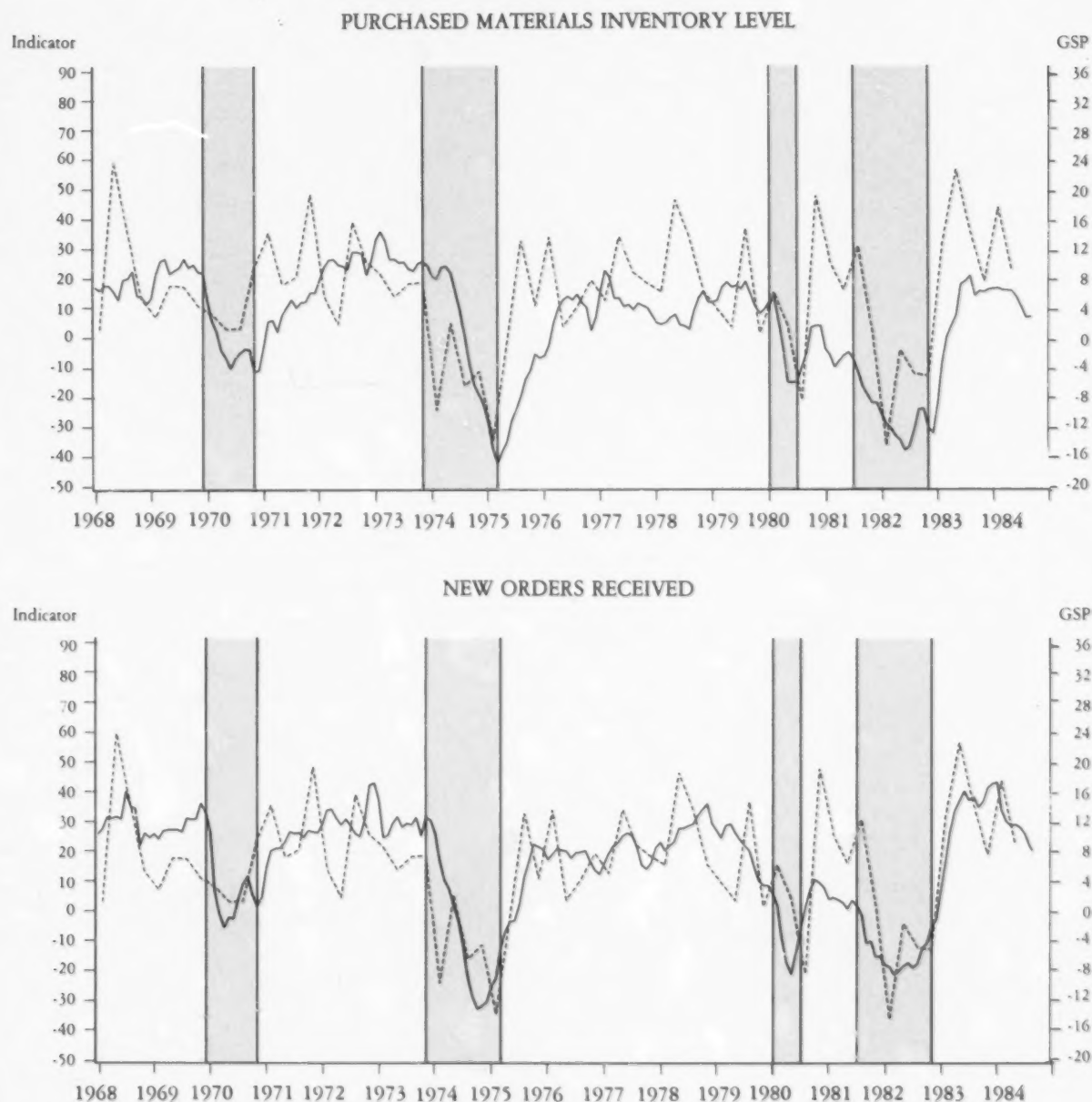
FIGURE I
COMPARISON OF THE PURCHASING SURVEY INDICATORS
AND THE ARIZONA GROSS STATE PRODUCT (GSP)*



*The purchasing survey indicators are seasonally-adjusted and are moving averages (refer to the solid line and to the left scale). The GSP data are the annualized quarterly percent changes (refer to the dashed line and to the right scale). National recessionary periods are shaded.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; and the purchasing management associations of Arizona and southern Arizona.

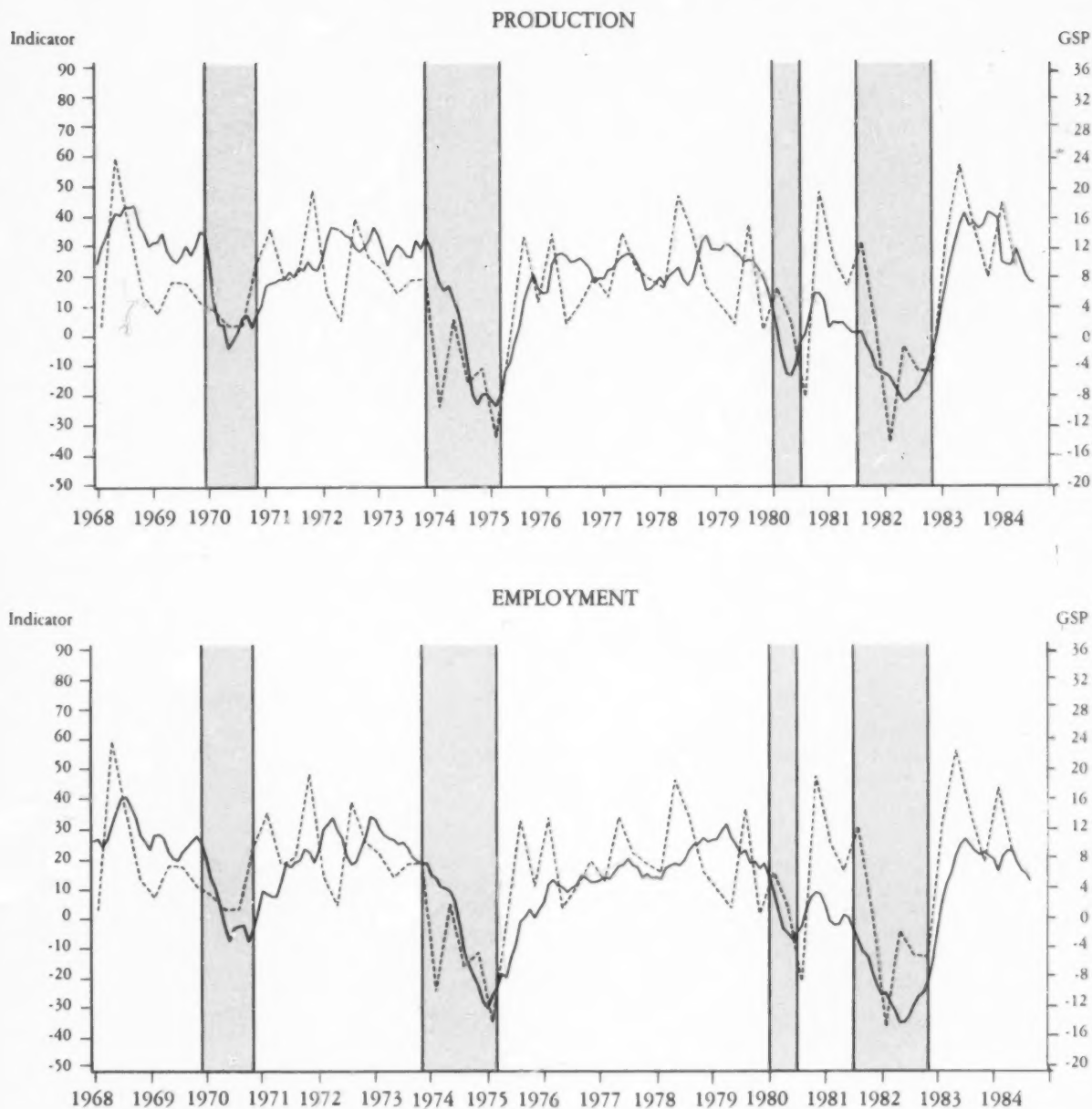
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Source: Bureau of Business and Economic Research, College of Business, Arizona State University; and the purchasing management associations of Arizona and southern Arizona.

FIGURE I (Cont.)
COMPARISON OF THE PURCHASING SURVEY INDICATORS
AND THE ARIZONA GROSS STATE PRODUCT (GSP)*



*The purchasing survey indicators are seasonally-adjusted and are moving averages (refer to the solid line and to the left scale). The GSP data are the annualized quarterly percent changes (refer to the dashed line and to the right scale). National recessionary periods are shaded.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; and the purchasing management associations of Arizona and southern Arizona.

TABLE 1
PURCHASING SURVEY MEDIAN VALUES DURING LAST FOUR ECONOMIC CYCLES

	Key Indicators					
	Orders	Production	Employment	Inventory	Delivery	Prices
Monthly change index ¹ :						
Peak value	41	38	32	24	54	77
Trough value	- 21	- 18	- 19	- 26	- 9	7
Number of months of lead time:						
Peak value to recession	13	13	12	9	7	2
Trough value to recovery	8	6	3	1	3	- 6 ²

¹Seasonally adjusted, three-month moving average.

²A negative number of months indicates that the series lags, not leads, the economic cycle.

Source: Calculated by the authors from data in surveys of the purchasing management associations of Arizona and southern Arizona.

interpretation of an indicator requires not only the value itself but comparison of that value to its level in preceding months.

Since the primary goal of the indicators is to predict turning points in economic performance, their directional changes are of prime importance. However, every change in the direction of an indicator does not predict a change in the direction of the economy. Similar to the national Index of Leading Economic Indicators, in which three successive monthly declines are necessary before most analysts would predict a recession, a decision rule must be applied to the Arizona survey indicators before predicting an economic turning point. Failure to apply such a decision rule results in "false signals," such as predicting a recession that will never occur.

The Decision Rule

The following decision rule, if applied to each of the six indicators, would have resulted in only one false signal during the last 16 years (inventory level in the late 1970s falsely signaled a recession): (1) a change in direction must last at least five months to predict a recession and at least three months to predict a recovery, and (2) the change in value must be at least 14 points. Additional verification of a true signal is available if the peak or trough value is near its historic median (see Table 1).

Even with the requirement of a five-month change of direction, this interpretation of the survey indicators

provides an unusually early warning of a recession. For example, during the expansion of the late 1970s, the new orders indicator clearly predicted a recession six months prior to its beginning; the delivery time indicator followed three months later. Because of the near absence of false signals, only two of the six indicators need to meet the requirements of the decision rule for a turning point in the economy to be forecast with confidence; one indicator alone is generally sufficient.

INTERPRETING THE CURRENT INDICATORS

Each of the six indicators declined to its most recent trough value during the 1982 recession. Each then rose steadily, attaining a value within five points of its historic median peak during 1983 or early 1984, as illustrated in Table 2. (The prices indicator did not come within 30 points of its historic peak, probably due to the relative lack of inflationary pressure during the current economic expansion). Currently, however, each indicator is declining at a slow but steady pace, clearly predicting a slowdown that should begin during the latter half of 1984. The first hint of the slowdown was signaled in May by the production indicator.

While a slowdown in both the national and Arizona economies is clearly indicated, it may not be severe enough to cause a decline in economic activity, especially in Arizona. Instead, a "growth recession" may result: a period of at least two successive quarters of real growth, at a rate less than the long-term trend (3 percent for Gross National Product and 5.5 percent for

TABLE 2
PURCHASING SURVEY — CURRENT ECONOMIC CYCLE

	Key Indicators					
	Orders	Production	Employment	Inventory	Delivery	Prices
Peak month.....	1/84	11/83	7/83	8/83	2/84	3/84
Peak value of monthly change index ¹ ...	43	40	26	21	52	46
Number of months of decline, to date ² ...	8	10	14	13	7	6
Magnitude of decline, to date.....	24	23	14	14	31	28

¹Seasonally adjusted three-month moving average.

²Includes results of the October 1984 survey.

Source: Calculated by the authors from data in surveys of the purchasing management associations of Arizona and southern Arizona.

Arizona Gross State Product). Such a growth recession occurred in Arizona during 1970, which was predicted by the survey indicators and which coincided with a national recession.

The third quarter, 1984, Gross National Product seems to verify the slowdown scenario. Percentage real growth at an annual rate was less than 2 percent, a sharp decline from the second quarter's 7.1 percent increase. While a true recession may yet develop, this seems unlikely due to the absence at this time of other classic recessionary conditions.

The early warning capability of the survey of purchasing managers was demonstrated again recently. Strictly adhering to the decision rule, using July data released in early August, 1984, two key Arizona indicators, production and new orders received, clearly signaled a slowdown. On the national level, only the first hint of such a slowdown was revealed in early August: A decline in the June Index of Leading Economic Indicators was announced by the Department of Commerce at the end of July. It was not until the end of October, with the downward revision of the August Index of Leading Economic Indicators, that three successive monthly declines were measured.

CONCLUSION

Large, computer-based, statistical models of the economy have come under criticism recently, primarily

because most of them did not predict the strength of the current economic recovery. However, the majority of people in the business community may not be interested in the professional squabbles among forecasters that appear on the pages of the *Wall Street Journal* over the projected rate of real economic growth. Rather, businesspeople need to know whether the coming year will be stronger or weaker than the current year, whether it is sensible to accumulate or pare inventories, and which pricing strategies will be most beneficial.

Based on this analysis of the purchasing management survey, it appears the answers to these latter questions are "imbedded" in the market and reflected in the professional behavior and technical information possessed by the respondents to the survey. Since the survey responses reflect the market activity of a very large number of participants (producers of final goods, suppliers of materials, purchasers of labor services, and managers of operations), they usually provide more reliable insight into economic activity than projections from individual forecasters or statistical models that cannot incorporate all of the available "real time" market data.

This analysis shows that the monthly survey of Arizona purchasing managers is a timely and reliable leading indicator. Thus, current declines in certain key components are economically important and bear close observation during the next few months.

Forecasting Arizona Economic Activity

LUKE KOONS
TOM R. REX

Rapid growth in the number of commercial economic forecasting firms during the past decade serves as testament to the growing demand from the business community for economic forecasts. Planning activities and investment decisions are increasingly dependent on reliable projections of economic variables such as prices, income, wages, and sales.

Although most commercial economic forecasters focus on the national economy, national forecasts do not adequately project the health of a state's economy. Due to a variety of factors, such as industrial mix, population, and demographics, a state's economic performance will deviate from that of the nation as a whole. This is especially true in Arizona, where growth

rates of gross state product, employment, and income fluctuate over the course of the business cycle to a greater degree than their national counterparts.

In order to facilitate business and government planning, the Bureau of Business and Economic Research (BBER) in the College of Business, Arizona State University, will begin to publish Arizona economic forecasts on a quarterly basis. This article introduces the BBER econometric forecasting model and presents the 1985 Arizona economic forecast.

FORECASTING METHODOLOGY

While the performance of the Arizona economy deviates enough from that of the national economy to make a separate Arizona economic forecast valuable, the deviation is not so great that the two economies should be considered dissimilar. In particular, the timing of the two economic cycles is nearly identical. Similarities in performance also exist as a result of the Arizona economy's dependence on the national economy: it is a component of the larger economy. For example, many Arizona industries compete in a national, rather than a regional or local market, making economic activity in these industries a function of national economic fluctuations.

Because of the interdependent relationship between the state and national economies, forecasts for important macroeconomic variables on the national level are significant inputs into the process of forecasting state level variables. The national forecasts are provided by

Solid growth during the last three quarters of 1985 is the forecast of the Bureau of Business and Economic Research in the College of Business at ASU. First quarter, 1985, will mark the end of a growth recession that seems to have begun during the latter half of 1984. This article describes the Bureau's new econometric forecasting model and presents 1985 forecasts for selected measures of the Arizona economy such as personal income, unemployment, inflation, and interest rates.

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Data Resources, Inc. (DRI), a Massachusetts-based company that provides a full range of econometric services. Given these forecasts, the BBER forecasting model controls for economic and institutional characteristics that are unique to Arizona. This requires understanding the structure of the Arizona economy and its interrelationship with the structure of the U.S. economy.

Specifying, Estimating, and Validating the Model

There are three distinct phases in the development of an econometric forecasting model: specification, estimation and validation. Specification involves the delineation of behavioral relationships in the various sectors of the economy. A relationship, or specification, must be expressed for every variable that is to be forecast. For example, if the particular variable of interest is residential building permits, a specification might include U.S. residential building permits, a mortgage interest rate, Arizona real personal income, and changes in the growth of Arizona's population. Economic theory is employed to lay out the initial specification for each of the variables.

The estimation process, referred to as "estimating the model," entails fitting the specified equations to historical data, using a statistical technique such as regression analysis. Estimation permits one to determine which of the explanatory variables are statistically significant in explaining the variation in the dependent variable, e.g., residential building permits. Since the economy is a dynamic system, it is necessary to periodically re-estimate the equations to ensure that the relationships still hold. For example, it may become necessary to switch from a fixed-rate mortgage to a variable-rate mortgage in the residential building permits equation.

The final phase of the forecasting process is to validate the accuracy of the forecasts produced by the model. This is done by estimating the model over an earlier time period, then forecasting from the end of this period to the current date. These forecasts are compared to the actual values. By employing actual values for the national variables during this forecasting period, one can pinpoint errors that are solely attributable to the state forecasting model. In an actual forecasting environment, however, errors are attributable to both the state forecasting model and the forecasts for the national variables. This latter source of error cannot be directly controlled by the regional forecaster.

The Arizona Forecasting Model

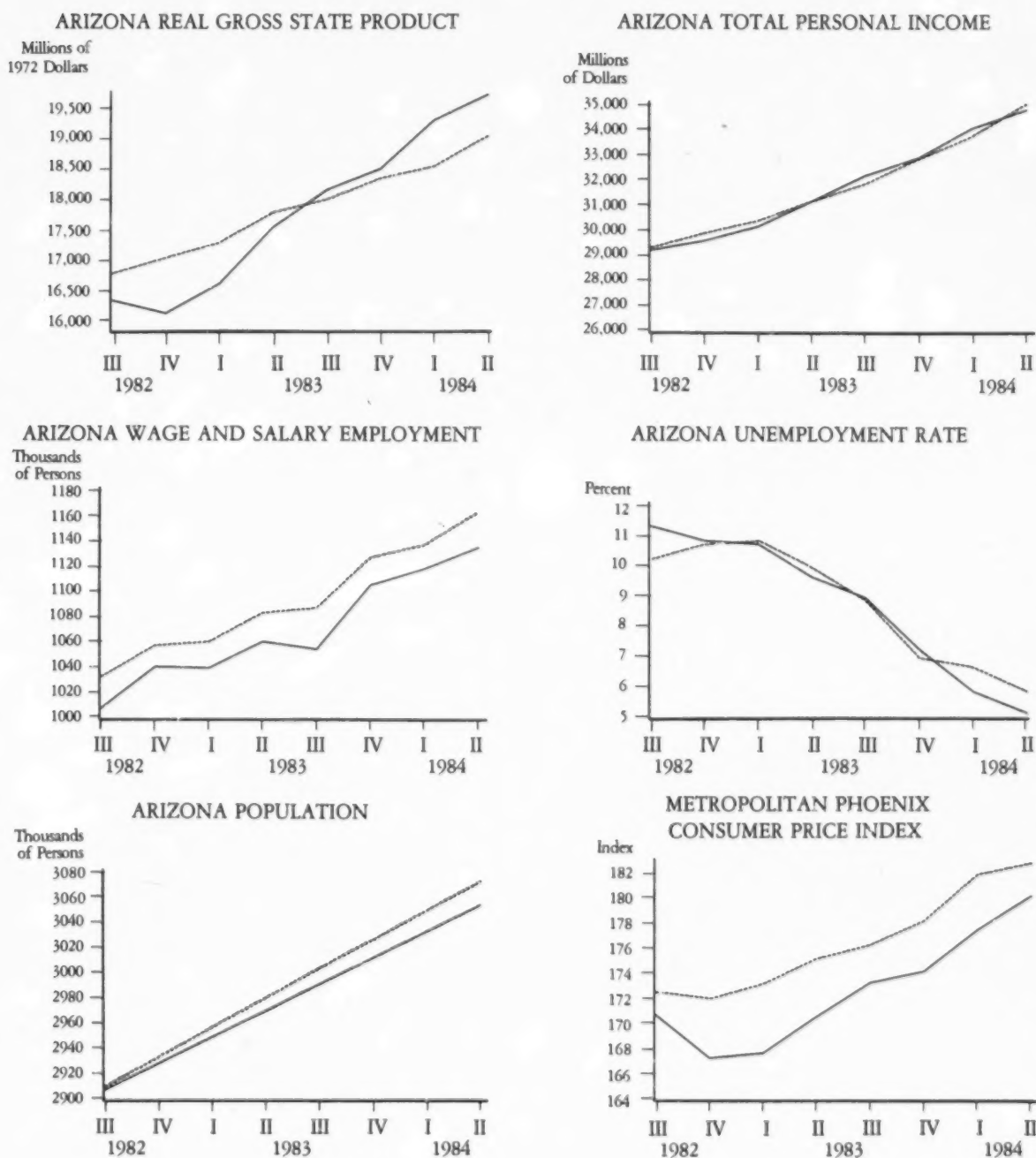
The BBER Arizona econometric forecasting model consists of 120 equations categorized into one of five major blocks: employment, wages, income, population, and prices. National variables forecast by DRI impact all blocks of the model. Interaction also occurs between blocks. For example, changes in Arizona employment impact Arizona income; income, in turn, impacts back on employment. Thus, the model is simultaneous in that many of the dependent variables affect each other. In short, the national variables account for the influence of national economic activity on the Arizona economy, while the interdependent relationships among the dependent variables control for state-level deviations from the national economy.

In order to validate the BBER econometric model, it was estimated from the first quarter, 1970, through the second quarter, 1982. Next, the model was simulated to provide forecasts from the third quarter, 1982, through the second quarter, 1984. These forecast values were then compared to the actual values of the variables during this latter time period, permitting an analysis of the model's performance in predicting the recovery from the 1981-82 recession. (Based on National Bureau of Economic Research reports, the national economy began recovery in November 1982.)

Comparisons of the actual and forecast values for the major indicators of the Arizona economy appear in Figure 1. The average percent error of the forecast for each indicator is presented in Table 1. The model performed reasonably well in forecasting the economic recovery from the 1981-82 recession, as evidenced by the predicted increase in personal income and gross state product as well as by the precipitous decline in the unemployment rate. As of the second quarter, 1984, the model's forecast for Arizona personal income exceeded the actual amount, approximately \$34.8 billion, by \$231 million — an error of 0.66 percent. The forecasts for personal income were even more accurate in the second and fourth quarters of 1983.

The model also performed well in projecting real Arizona Gross State Product. The forecast error in this case averaged 0.36 percent. The forecast of total wage and salary employment and of the Metropolitan Phoenix Consumer Price Index (CPI) is less accurate, however. Although the model correctly predicted the changes in growth for these two variables, it over-predicted the actual level in each case. Nevertheless, the forecast error over the simulation period was a mere 2.2 percent for each variable.

FIGURE I
COMPARISON OF ACTUAL AND FITTED VALUES OF SELECTED ECONOMIC INDICATORS*



*The actual value of the economic indicator is shown as a solid line. The fitted (predicted) value of that indicator is shown as a dashed line.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 1
COMPARISON OF ARIZONA ACTUAL AND
FITTED VALUES IN FORECASTING
RECOVERY FROM 1981-82 RECESSION

Average from Third Quarter, 1982
Through Second Quarter, 1984

	Actual	Forecast	Percent Error
Gross State Product			
(Millions of 1972 dollars).....	17,781	17,846	0.37
Personal Income			
(Millions of current dollars).....	31,734	31,752	0.06
Unemployment Rate (Percent).....	8.7	8.7	0.00
Wage and Salary Employment			
(Thousands of persons).....	1,069.7	1,093.3	2.20
Metropolitan Phoenix			
Consumer Price Index			
(1977 = 100).....	172.6	176.4	2.20
Population			
(Thousands of persons).....	2,978.9	2,991.1	0.40

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

ARIZONA ECONOMIC FORECAST FOR 1985

After validating the model, it was estimated over the period from the first quarter, 1970, through the third quarter, 1984. However, third quarter, 1984, personal income data were not yet available from the U.S. Department of Commerce, Bureau of Economic Analysis. Thus, the previously forecast values of the income components were employed for the third quarter, pending receipt of the actual data in January 1985.

The forecasting period runs through the fourth quarter, 1985. Forecasts for selected measures of Arizona's economy appear in Table 2, and national forecasts made by DRI are provided for comparative purposes. The DRI forecast assumes a growth recession beginning in the second quarter, 1985, with growth less than the long-term trend of 3 percent continuing through the remainder of the year. In contrast, the BBER forecast assumes continued strong growth throughout 1985. It reflects third quarter, 1984, GNP growth and leading economic indicators on both the state and national levels that suggest a growth recession is occurring during the latter half of 1984. Not likely to

TABLE 2
ARIZONA AND UNITED STATES ECONOMIC FORECASTS

	Annual Average			
	1984		1985	
	Arizona	United States	Arizona	United States
Gross Product				
Millions of 1972 dollars.....	19,732	1,642,800	21,212	1,687,300
Percent change.....	11.5	7.0	7.5	2.7
Personal Income				
Millions of current dollars.....	35,314	3,009,500	39,117	3,213,000
Percent change.....	11.9	9.7	10.8	6.8
Unemployment Rate (Percent).....	5.0	7.4	4.7	7.2
Wage and Salary Employment				
Thousands of persons.....	1,146	94,095	1,222	96,597
Percent change.....	7.6	4.4	6.7	2.7
Consumer Price Index (Percent change).....	6.0	4.3	5.7	3.9
Population				
Thousands of persons.....	3,082	236,425	3,211	238,650
Percent change.....	4.0	0.9	4.2	1.0

Source: National forecasts by Data Resources, Inc.; Arizona forecasts by Bureau of Business and Economic Research, College of Business, Arizona State University.

last beyond the first quarter, 1985, this growth recession will be followed during the remainder of 1985 by growth that is solid but not as spectacular as that during 1984.

Gross Product, Personal Income

The varying assumptions noted above explain the wide difference between Arizona and the nation in the 1985 projections (see Table 2). Arizona GSP growth at 7.5 percent is well above the projected long-term trend of 5.5 percent, while GNP growth is forecast by DRI to fall below its long-term trend. Similarly, growth in personal income is expected to remain much stronger in Arizona than it will be nationally, although the 1985 growth rates for both personal income and gross product will be slower in 1984, both nationally and locally.

Unemployment

The unemployment rate in Arizona declined during 1984 from 6.3 percent in January to a record 4.0 percent in September. The annual average for 1984 is estimated to be 5.0 percent. During 1985, the unemployment rate probably will rise slightly from its current low levels, but the annual average is expected to be less than 5.0 percent.

Population Growth

Following the pattern of previous economic cycles, population growth probably will peak during 1985, exceeding the rapid growth of 1984. The greatest migration to Arizona usually occurs far into an economic expansion.

Inflation Rate

The inflation rate in Arizona (measured by the Metropolitan Phoenix Consumer Price Index) is also expected to follow the pattern of previous economic cycles, in which it exceeds the national average during

expansions but is lower during recessions and recoveries. A slight decline in the inflation rate is expected both in Arizona and in the nation during 1985. While a decline is contrary to what would be expected at this stage of the business cycle, the usual signs of imminent price increases, such as rapidly increasing wages and high capacity utilization, are not currently present. In addition, recent declines in the Producer Price Index, which usually leads the Consumer Price Index, indicate that an increase in the inflation rate for consumers is still months away.

Interest Rates

Interest rates are not anticipated to change much during 1985, although analysts disagree as to their direction and the amount of change. The current economic slowdown is creating downward pressure on interest rates, but an increase in economic growth in 1985 would likely cause rates to again rise slightly.

CONCLUSION

The outlook for the Arizona economy during 1985 is one of continued strong economic growth, with economic activity on the state level outpacing national activity.

The major danger to this rather optimistic 1985 forecast for Arizona is that the current slowdown in economic growth is only a prelude to a 1985 recession. During prior economic cycles, such a pattern has occurred, most recently in 1979. In that year, growth was below trend, both in Arizona and nationally, in three of four quarters preceding the 1980 recession. However, in contrast to 1979, the classical precursors of a recession are absent at this time. For example, capacity utilization is still low, and price pressures are minimal.

The ASU Bureau of Business and Economic Research will continue to enhance the econometric model described in this article and will issue Arizona economic forecasts on a quarterly basis.

Forecasting Residential Construction Activity

LEE R. McPHERTERS
STEFAN C. NORRBIN

The construction industry is a key component of the metropolitan Phoenix economy. It is one of the more vigorous participants in economic expansions, while also being especially sensitive to the forces of recession. Construction activity often turns down in advance of other components of the economy, making the industry a closely watched leading indicator of business cycle fluctuations. Many analysts believe that weakness in the residential market, measured by building permits issued for single family dwellings and multifamily apart-

ment units, is a particularly important signal of general economic slowdown.

Construction employment usually rises sharply during economic expansions as residential, commercial, and industrial construction increase to meet the needs of new residents and growing businesses. During the recent economic recovery, construction employment in Maricopa County jumped from 46,400 jobs in January, 1983, to 62,900 jobs in August, 1984, an increase of 35.6 percent. Recently, however, this growth has slowed. Between May and August, 1984, construction employment increased by only 100 jobs, compared to a gain of 3,800 jobs between May and August, 1983.

Because of the importance of the construction industry to the metropolitan Phoenix economy, researchers at the Arizona Real Estate Institute and the Bureau of Business and Economic Research, ASU College of Business, have compiled and analyzed data on Maricopa County residential, industrial, and commercial building permits since 1954. During 1984, the Bureau has developed an econometric model of the metropolitan Phoenix economy to further improve understanding of the relationship between its major components, including the construction industry. This article discusses the model's residential housing equations and provides 1985 forecasts of single family and multifamily building activity in metropolitan Phoenix.

MODELLING RESIDENTIAL HOUSING

The metropolitan Phoenix model is based on 58 equations that describe the local economy. A "block

Two alternative 1985 forecasts for the metropolitan Phoenix residential real estate market are presented in this article. The first results from the residential housing equations of an econometric model recently developed by the Bureau of Business and Economic Research in the College of Business at ASU. A second "judgmental" forecast reflects the current, subjective outlooks of a panel of Bureau economists and real estate analysts.

Lee R. McPheters is Bureau Director and Professor of Economics in the ASU College of Business. Stefan C. Norrbín is a graduate research assistant for the Arizona Real Estate Institute. The authors gratefully acknowledge funding support for the econometric modelling project provided by the Real Estate Economic Impact Study Group.

model" similar in many respects to the larger model of Arizona discussed on page 11 of this issue, it is based on quarterly data from 1970 through 1983 and is estimated using regression analysis. The influence of national variables on the local economy is estimated from national forecasts by Data Resources, Inc., a Massachusetts-based forecasting firm.

In brief, national and Arizona variables influence the model's estimates of Maricopa County employment. Employment then determines personal income, which is combined with data on mortgage rates, housing prices, seasonal factors, and other variables to form the behavioral equations that explain residential housing permits.

Those variables having the strongest influence on single and multifamily building permits are shown in Table 1. The plus (+) and minus (-) signs next to each variable indicate its statistical effect on building permits. For example, as personal income in the Phoenix area has risen (due to increases in population, employment, and wages), the number of single family permits has historically increased.

The payment/income ratio is a constructed variable that incorporates the key aspects of the home buying decision. The numerator for any quarter is the required monthly payment on a median-priced new home when a 10 percent down payment is made on a 30-year mortgage at the prevailing interest rate. The denominator is the average personal income in metropolitan Phoenix for the given period. Increases in home prices or mortgage rates will raise the ratio, while increases in income (all other factors equal) will reduce the ratio. The ratio may be thought of as an inverse measure of affordability: An increase in the ratio indicates a decrease in the affordability of single-family housing. Thus, increases in the ratio are associated with declines in single family building permits.

The multifamily-shift parameter is an explanatory variable in each equation for single family and multifamily housing permits. Another constructed variable, it captures the effect of an abrupt change in the number of multifamily building permits relative to single family permits during the mid-1970s. The variable is calculated as a simple percentage: the ratio of multifamily permits to total residential permits. The values of this variable are shown in Figure 1. Between 1970 and 1974, multifamily permits accounted for approximately 40 percent of residential building permits. In 1975, the multifamily share plummeted to less than 10 percent of permits, then slowly rose over the remainder of the

TABLE 1
EXPLANATORY VARIABLES IN RESIDENTIAL
BUILDING PERMIT EQUATIONS
(By Housing Type)

<i>Single Family</i>	<i>Multifamily</i>
Personal Income (+)	Personal Income (+)
Payment/Income Ratio ¹ (-)	Prime Interest Rate (-)
Multifamily-shift Parameter ² (-)	Multifamily-shift Parameter (+)

¹The payment/income ratio is the monthly payment on a 30-year mortgage at the prevailing interest rate, with a 10 percent down payment on a median priced house, expressed as a percentage of average personal income.

²The multifamily-shift parameter is the ratio of multifamily permits to all residential permits.

Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

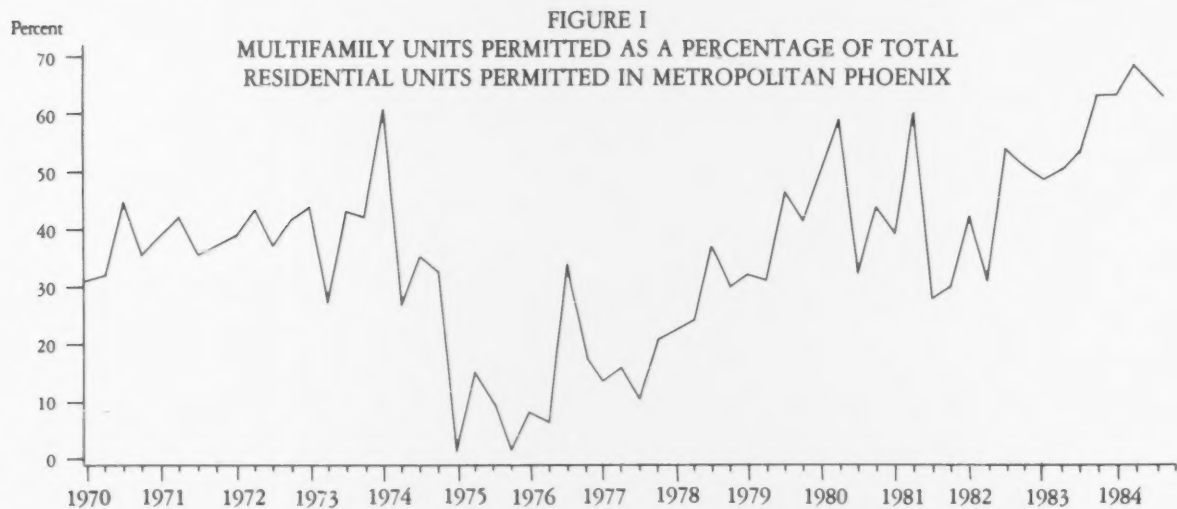
decade. The decline in the ratio, followed by a gradual increase in its value, allows the forecasting model to incorporate a characteristic of the multifamily permit data that otherwise would be unaccounted for.

The variables listed in Table 1 explain 80 percent of the variation in single family permits and 67 percent of the variation in multifamily permits during the 1970-83 period. A visual impression of the model's ability to explain residential building permits is provided in Figures II and III. In each figure, the solid line represents the actual number of permits, while the dotted line indicates the number predicted by the equations.

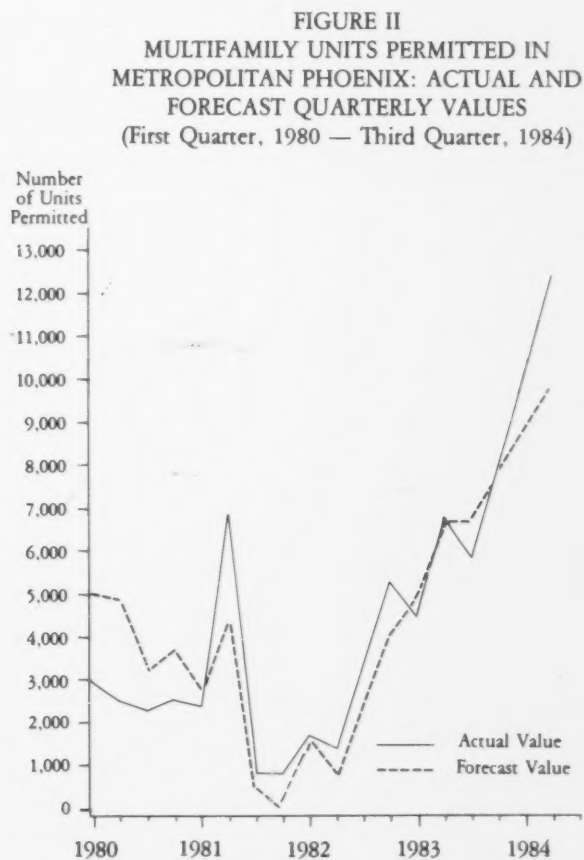
FORECASTS FOR 1985

Due to their volatility, residential building permits are particularly difficult to forecast. For example, the variation in multifamily permits between the third quarter, 1981, and the third quarter, 1984, is 1,000 percent (from a low of 800 in 1981 to slightly more than 8,000 in the third quarter, 1984).

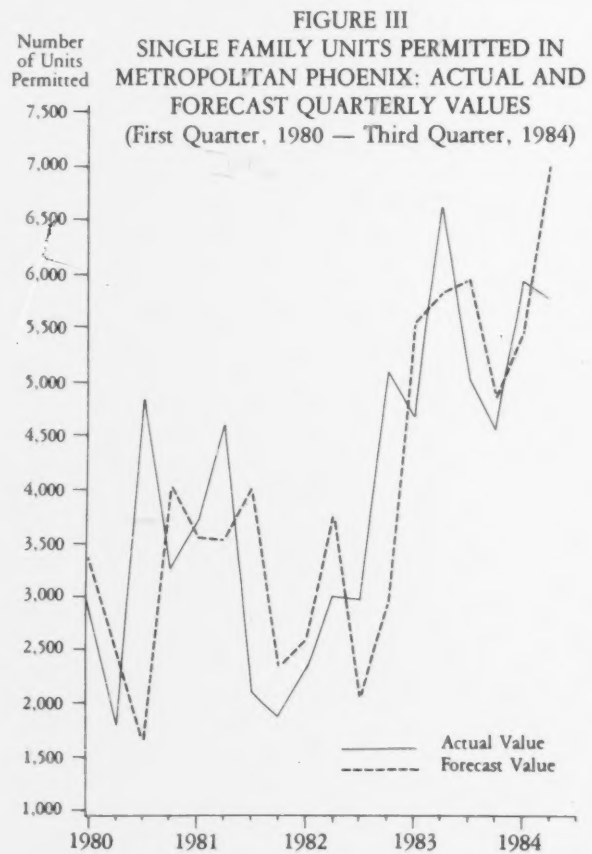
One source of difficulty lies in the inability of any statistical model to incorporate new information on changes in human behavior. Models assume that past relationships will continue to hold in the future. Of course, changes in factors that are excluded from the set of explanatory variables may have an effect on the performance of the housing equations. For example, a reduction in the rate of household formation due to postponement of marriage would reduce housing demand; the model, however, would not "know" about



Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

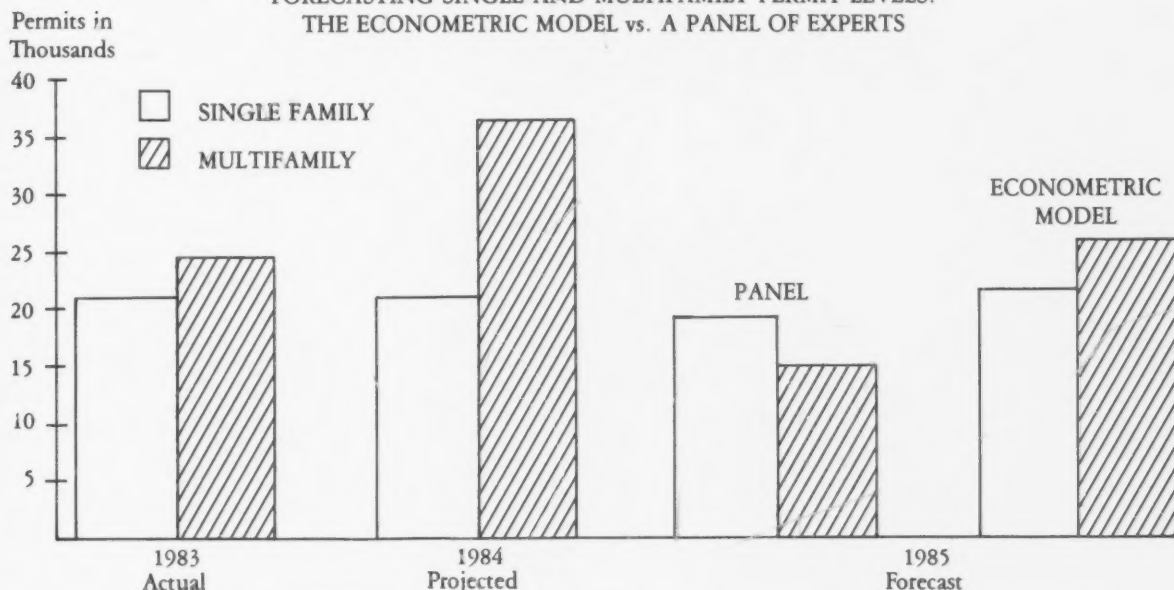


Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.



Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE IV
FORECASTING SINGLE AND MULTIFAMILY PERMIT LEVELS:
THE ECONOMETRIC MODEL vs. A PANEL OF EXPERTS



Source: Arizona Real Estate Institute and Bureau of Business and Economic Research, College of Business, Arizona State University.

this change in basic human behavior. Similarly, alterations in tax laws, "bandwagon" effects leading to a speculative construction boom, or sudden changes in the expectations of builders, investors, and consumers are usually difficult to incorporate into a forecasting model.

For these reasons, forecasts that result from the building permit equations are best regarded as guides for those accumulating information from several diverse sources. The forecasts are accurate on average but in any given year may deviate significantly from the actual values. The fundamental assumption underlying the 1985 forecasts is that the national economy will experience real growth of 2.7 percent in Gross National Product during 1985, with no substantial change in interest rates occurring. The assumptions for the Arizona economy include real growth in Gross State Product of 7.5 percent during 1985 and an increase in wage and salary employment, moderating to 6.7 percent.

Under these assumptions, single family residential permits are forecast to reach a level of 21,500 units in metropolitan Phoenix during 1985. This forecast value is not substantially different from the actual number of permits recorded during the past two years. The forecast

for 1985 represents an increase of 2 percent over the 21,000 single family units projected for 1984. The model predicts 25,500 multifamily permits will be issued during 1985. Although this is a 29 percent decline from the 36,000 units projected for 1984, it still represents a level of construction activity well above the average of the past decade.

The model's 1985 forecasts, especially the forecast for multifamily permits, illustrate the type of results often encountered when using a statistical model. Based on available data, the model has no reason not to expect multifamily activity to again be relatively strong during 1985. The projected 10,500 reduction in multifamily permits can be traced to the expected slowing in overall economic growth, which will be reflected in slower personal income growth in the multifamily equation.

However, additional information is available that would be difficult to incorporate into the econometric model. This information suggests that a much sharper decline in multifamily activity may occur during 1985. Until 1983, the record number of multifamily units permitted during any year was 15,400 in 1972. Between 1978 and 1982, an average of 12,100 units was permitted annually in the metropolitan Phoenix area. In

1983, the number of multifamily permits rose sharply to 24,700; the number grew to an unprecedented 36,000 in 1984. At the same time, construction of single family homes maintained a strong level. The result was two consecutive years of record numbers of new housing units permitted, with the 57,000 projected in 1984 far exceeding the earlier record of 46,000 in 1978.

Several factors combined to generate the multifamily housing boom. These include a 1981 tax law change, increased levels of investment capital made available through joint venture groups and syndicators, and a dynamic local economy. While the multifamily vacancy rate is not yet much higher than the historical average, thousands of the permitted units still have not been completed. Some observers expect that these units will not immediately be absorbed, if the record level of population growth necessary for their absorption does not occur. New household formation, which creates a smaller average household size, has contributed to occupancy of the units completed to date. However, a continued reduction in household size is not likely. The result may well be a rapidly rising vacancy rate during 1985 and a sharp curtailment of new multifamily activity.

Given this information, the Bureau of Business and Economic Research in the ASU College of Business has decided to undertake an experiment in which the econometric model, which is based on the stability of historical relationships, will be pitted against a panel of Bureau economists and real estate analysts. The panel members were asked to provide an alternative, judgmental forecast for 1985, based on their current subjective outlooks for residential building permits in metropolitan Phoenix. Both forecasts are presented in Figure IV.

Because the panel holds that the growth in multifamily construction activity has exceeded the rate of existing and projected population growth, it foresees a

58 percent decline during 1985 in the number of multifamily units permitted, to 15,000. The panel believes that limited demand for multifamily units will make them readily available at attractive rental levels. Hence, many households may continue to live in multifamily units instead of following the historical pattern of moving into single family homes. Their decision not to move, combined with the continuing problem of affordability, leads the panel to predict a 10 percent decline in single family permits during 1985, to 19,000 units.

This expected decline needs to be placed in historical perspective. The 15,000 multifamily units forecast by the panel would have been a near record prior to 1983. The forecast of 19,000 single family units exceeds the total reached in 7 of the 10 years preceding 1983. Thus, the panel expects that, despite a 40 percent decline in 1985 from the 1984 record for total housing units permitted, the residential housing market will remain quite strong, exceeding the level reached in 10 of the last 14 years.

CONCLUSION

Two alternative residential real estate forecasts for 1985 have been provided. The single family construction projections from the econometric model are not radically different from those by the panel of experts. However, the panel foresees a sharp drop in multifamily units, while the econometric model forecasts a more moderate decline. In this age of growing reliance on computers for planning and decision making, some traditionalists may find themselves cheering for the panel of experts' judgmental forecasts. Others, more technically oriented, may place their chips on the econometric model. During 1985, the Bureau will analyze the performance of the two forecasts and provide a mid-year report on the competition.

Arizona Construction Activity Third Quarter, 1984

JAY Q. BUTLER

Less home building and apartment development during the third quarter contributed to a slowing of Arizona construction activity from second quarter levels. Fewer permits, with a lower dollar value, were recorded. Activity still was above the level of third quarter, 1983, however. This slowdown is not generally viewed as a prelude to a decline but rather as a response to more stable consumer demand, slowing economic expansion, and higher interest rates.

A total of 23,862 permits, valued at \$1.2 billion, were issued throughout Arizona, with the counties of Maricopa and Pima accounting for 88 percent of the total dollar value. This level of activity represents a 5 percent decrease in issued permits but a 33 percent increase in dollar value compared to third quarter, 1983. However, in contrast to the second quarter, 1984, total permit activity decreased 19 percent, while total dollar value declined a comparable 20 percent.

Table 1 reports on the key areas of construction activity. The quarterly building permit, new housing start, and real estate sales tables are at the end of this report.

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SECTORAL ACTIVITY

Residential

Maricopa County. The single family sector recorded its third consecutive quarter of declining activity, with 4,626 permits, a 20 percent decrease from the second quarter figure. Year-to-date, 16,346 single family permits were issued, comparable to the 16,410 permits for the same period in 1983.

All of the major cities in the county reported decreased activity from the second quarter (see the New Housing Starts table). However, largely due to development in Sun City West, single family activity in unincorporated Maricopa County increased slightly.

Remodeling activity continued to be strong, with 1,334 permits valued at \$11 million. Through the first three quarters of 1984, a total of 5,093 alteration and addition permits valued at \$40 million were issued, in contrast to 5,671 permits worth \$30 million for the same period of 1983.

The decline in building permits issued was comparable to the drop in new homes sold (2,541 homes during the second quarter to 2,396 homes during the third quarter). During the first three quarters of 1984, 7,489 homes were sold, compared to 6,874 sales for the first three quarters of 1983.

The metropolitan median sales value continued to increase, from \$75,875 during the second quarter to \$79,250 for the third quarter. Again, some of the price increase could be attributed to a gain in sales of more

expensive homes. During the second quarter, 41 percent of the new homes were sold for more than \$80,000, compared to 47 percent for the third quarter. During the first quarter, 1983, immediately after the recession, only 18 percent of the new homes were sold for more than \$80,000.

In the resale market, the number of homes sold during the third quarter decreased to 9,369 from the 10,492 homes sold during the second quarter. The median sales price continued to increase, from \$70,500 during the second quarter to \$73,000. In contrast to the new home market, resale homes that were priced at more than \$80,000 sold at a constant level of approximately 38 percent of all previously owned homes. More information on sales activity is reported on page 24 of this issue.

Rest of Arizona. Pima County recorded 885 single family permits during the third quarter, a decline of 22 percent from the second quarter's number. During the first three quarters of 1984, 3,243 permits were issued, in contrast to 3,553 permits for the same period of 1983. Third quarter mobile home activity decreased 16 percent from the second quarter figure to 506 permits.

Comparable to the decline in single family permits in Maricopa and Pima counties, a 17 percent decrease in single family activity in the other counties pushed permits below the second quarter level to 1,362 permits for the third quarter. Flagstaff was the only city to report significant improvement over the second quarter, moving from 89 permits to 150 permits. The most activity occurred in Lake Havasu City and Prescott; as well as in the unincorporated areas of Coconino, Gila, Navajo, Yavapai, and Yuma counties. Mobile home activity continued to decline, from 1,312 permits during the second quarter to 1,262 permits for the third quarter. Mohave County again led this sector, with 349 permits, followed by Yavapai, Pinal, Coconino, and Yuma.

Commercial

Maricopa County. The multifamily (apartment) sector has dominated the current housing market, with a year-to-date total of 28,497 permitted units, which exceeds the 1983 record (21,406 units permitted during the entire year). In Glendale, 156 permits for 1,787 units were issued during the third quarter, in response

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(Third Quarter 1984, Second Quarter 1984, and Third Quarter 1983)

	COMMERCIAL									
	SINGLE FAMILY		APARTMENTS ^a		OFFICE BUILDINGS ^b		RETAIL STORES ^c		INDUSTRIAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
MARICOPA COUNTY										
Third Quarter, 1984.....	4,626	312,765,251	517	176,245,746	96	118,924,753	207	29,689,100	183	78,747,547
Second Quarter, 1984.....	5,783	383,006,339	487	338,600,771	112	78,626,521	220	54,795,378	134	52,279,204
Third Quarter, 1983.....	5,070	283,202,525	403	115,003,638	91	49,392,803	173	31,923,716	135	24,729,681
PIMA COUNTY										
Third Quarter, 1984.....	885	53,237,603	63	34,778,291	22	10,040,262	12	2,841,930	26	6,579,358
Second Quarter, 1984.....	1,134	65,622,789	138	60,050,408	26	13,297,945	23	2,832,202	33	11,910,507
Third Quarter, 1983.....	1,110	62,072,491	27	48,243,033	16	14,183,614	16	5,426,240	5	1,303,900
REST OF ARIZONA										
Third Quarter, 1984.....	1,362	63,643,115	29	7,001,471	50	4,414,228	66	7,864,426	27	4,443,907
Second Quarter, 1984.....	1,634	75,909,428	44	10,916,989	48	5,114,991	76	8,591,830	37	13,716,414
Third Quarter, 1983.....	1,489	62,174,401	6	1,758,439	33	2,497,769	75	8,466,181	43	12,436,955
ARIZONA TOTAL										
Third Quarter, 1984.....	6,873	429,645,969	609	218,025,508	168	133,379,243	285	40,395,456	236	89,770,812
Second Quarter, 1984.....	8,551	524,538,556	669	409,568,168	186	97,039,457	319	66,219,410	204	77,906,125
Third Quarter, 1983.....	7,669	407,449,417	436	165,005,310	140	66,074,186	264	45,816,137	183	38,470,536

^aFive or more housing units.

^bOffice, bank, medical and professional buildings.

^cShopping centers and other mercantile buildings.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

to announced increases in development fees. Even with the record level of activity, the third quarter metropolitan vacancy rate followed the seasonal cycle by declining to 9 percent. However, this was the highest third quarter vacancy rate of the 1980s.

A total of 48,479 housing units were permitted year-to-date through the third quarter, which exceeds the previous record of 46,351 housing units during all of 1978. However, while the 1978 single family sector accounted for 30,479 permits, 67 percent of the total market, the 1984 single family sector has provided only 34 percent of the market.

Although the number of permits for office buildings declined from 112 during the second quarter to 96 for the third quarter, the dollar value jumped from \$79 million to \$119 million. This level of activity was well above that reported for third quarter, 1983: 91 permits worth \$49 million. Office building activity was most evident in Mesa (11 permits valued at \$4 million), Phoenix (15 permits at \$91 million), and Scottsdale (23 permits at \$17 million). In Phoenix, four permits, each valued at \$11 million or more, were issued for buildings of at least 380,000 square feet.

After a strong second quarter in which 220 permits valued at \$55 million were issued, retail sector activity declined to 207 permits worth \$30 million during the third quarter. This level of activity is fairly comparable to that of a year ago. Areas of activity included Mesa (11 permits valued at \$6 million), Phoenix (56 permits at \$10 million), and Scottsdale (11 permits at \$6 million).

Rest of Arizona. Activity in Pima County's apartment sector declined from 138 permits worth \$60 million during the second quarter to 63 permits worth \$35 million for the third quarter. The year-to-date permit figure through the third quarter, 1984, was 12,428 total housing units, slightly less than the 1979 record of 13,574 units for the entire year. However, only 30 percent of the authorized units during 1984 have been single family houses, in contrast to 70 percent during 1979. The office building sector continued a moderately high level of activity, with 22 permits worth \$10 million, down slightly from both the second quarter, 1984, and third quarter, 1983, levels. The retail sector, with 12 permits valued at \$2.8 million, continued to provide a stable level of activity (see Table 1).

As in the metropolitan counties, apartment sector activity in the remaining 13 counties decreased, from 44 permits valued at \$11 million during the second quarter to 29 permits valued at \$7 million during the third quarter. However, the level still was well above the 6 permits worth \$2 million recorded during the third

quarter, 1983. Areas of apartment development included Payson (4 permits for 63 units), Mohave Valley North (6 permits for 24 units), unincorporated Pinal County (6 permits for 128 units), Prescott (5 permits for 37 units), and Yuma (5 permits for 60 units). The office building sector declined slightly during the third quarter to 50 permits worth \$4.4 million. Primary areas of activity included unincorporated Cochise County (1 permit at \$1 million), Mohave Valley North (4 permits at \$213,000), unincorporated Pinal County (6 permits at \$1.3 million), Cottonwood (3 permits at \$370,000), Prescott (2 permits at \$390,000), unincorporated Yavapai County (7 permits at \$575,000), and Yuma (1 permit at \$400,000). The retail sector continued to decline, dropping from 76 permits worth \$8.5 million during the second quarter to 66 permits worth \$7.8 million during the third quarter.

Industrial

The industrial sector in Maricopa County recorded another strong increase in construction activity during the third quarter over the preceding quarter, moving from 134 permits valued at \$52 million to 183 permits worth \$79 million. This value was more than triple the third quarter, 1983, figure. Areas of industrial development activity during the third quarter included Chandler (3 permits at \$10 million), Glendale (19 permits at \$7 million), Phoenix (50 permits at \$33 million), and Tempe (89 permits at \$20 million). Again, most of the activity was for the construction of new industrial structures.

Although Pima County continued to record strong industrial activity, with 26 permits worth \$7 million, the level was down from the second quarter (33 permits valued at \$14 million). However, it was well above the activity level of third quarter, 1983 (5 permits worth \$1 million). Industrial activity was divided between Tucson (12 permits valued at \$2.8 million) and unincorporated Pima County (13 permits valued at \$3.7 million).

Due to a limited industrial base, industrial sector activity in the other Arizona counties can be heavily influenced by a single project. During the second quarter, these counties issued 37 permits worth \$13 million, but most of the dollar value was due to a single \$10 million project in Casa Grande. Hence, the 27 permits worth \$4.4 million that were issued during the third quarter represent comparable growth in the industrial base. Areas of industrial development activity included unincorporated Coconino County (2 permits at \$2 million),

the Kingman area (1 permit at \$400,000), unincorporated Santa Cruz County (1 permit at \$350,000), and unincorporated Yuma County (4 permits at \$700,000).

LOOKING AHEAD

During the first three quarters of 1984, a total of 82,994 permits worth more than \$4 billion were issued in Arizona. During all of 1983, 105,618 permits valued at \$3.6 billion were issued. In Maricopa County, 49,348 permits worth \$2.9 billion have been issued during 1984, compared with 63,567 permits worth \$2.5 billion during 1983. This tremendous increase in construction has been propelled by very strong economic growth, especially in Maricopa County.

Unlike previous construction cycles, the single family sector has not led the expansion. Most of the development activity has been in the apartment and office building sectors and, recently, in the industrial sector. Growth in these sectors has resulted from the economic expansion and from innovations in financing and development. For example, the office building sector features several large building developments designed to serve the rapidly growing services industry.

Even though the single family sector appears not to be fully participating in current economic growth, appearances are deceiving due to the rapid growth of the other sectors. By the end of 1984, single family activity in Maricopa County is expected to be comparable to the 20,961 units permitted during 1983. Because the outlook is for continued economic expansion during 1985, the single family sector could post three consecutive years of stable activity, which is highly unusual for this sector.

During the third quarter, interest rates began to decline, which might provide growth stimulus to the single family sector. They are not expected to decline very far, however — especially on mortgages — and the downward trend probably will not last beyond early 1985.

The general expectation for 1985 is for slower, more sustainable economic growth. This outlook should be favorable for the construction industry. However, due to heavy commercial building during 1984, the markets for new office space and apartment units must remain strong. With these two exceptions, the construction outlook for 1985 is promising.

Metropolitan Phoenix Real Estate Sales Third Quarter, 1984

The number of homes sold in the metropolitan Phoenix area during the third quarter declined nearly 10 percent from the second quarter level, to less than 13,900 homes (see Table 1). Although resale units, which constitute more than three-fourths of all home sales, led the decline, sales of new, single family homes also dropped.

The third quarter sales level was 3 percent less than that of the third quarter, 1983, indicating that peak sales activity for the current economic cycle may have occurred during the second quarter. The interest rate rise during the second quarter is probably responsible for the third quarter decline in sales. With the general

economy slowing late in 1984, a substantial decline in mortgage interest rates probably will be necessary to restimulate the real estate market.

The median sales price rose 3.0 percent during the third quarter, an increase larger than that of the three preceding quarters. The median price varied from \$63,000 for resale townhouses and condominiums to \$79,250 for new single family dwellings, with an overall median price of \$72,575.

The median rate of housing appreciation in metropolitan Phoenix during the third quarter was 0.8 percent, the eighth consecutive quarter of 0.8 or 0.9 percent gains.

TABLE 1

<i>Third Quarter, 1984</i>	<i>Single Family</i>			<i>Townhouse/Condominium</i>			<i>Grand Total</i>
	<i>Resale</i>	<i>New</i>	<i>Total</i>	<i>Resale</i>	<i>New</i>	<i>Total</i>	
Median sales price.....	\$73,000	\$79,250	\$75,000	\$63,000	\$63,075	\$63,000	\$72,575
Percent change from prior quarter.....	3.5	4.4	4.2	-3.1	0.2	-1.6	3.0
Percent change from same quarter, prior year.....	5.0	10.6	7.1	3.3	20.3	8.6	5.9
Number of sales.....	9,369	2,396	11,765	1,232	861	2,093	13,858
Percent change from prior quarter.....	-10.7	-5.7	-9.7	-18.3	8.2	-9.2	-9.6
Percent change from same quarter, prior year.....	-3.1	-8.3	-4.2	-10.0	34.7	4.3	-3.0

Arizona Building Permits: Quarterly Report

THIRD QUARTER, 1984

	RESIDENTIAL*			COMMERCIAL			INDUSTRIAL			OTHER			TOTAL		
	Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value	
APACHE COUNTY															
Eagar	69	1,147,150		3	65,000		0	0		12	90,436		84	1,302,586	
St. Johns	18	420,000		3	65,000		0	0		2	18,000		23	503,000	
Springerville	20	N/C		0	0		0	0		0	0		20	N/C	
Unincorporated	09	N/C		0	0		0	0		0	0		9	N/C	
COCHISE COUNTY															
Benson	22	727,150		0	0		0	0		10	72,436		32	799,586	
Bisbee	267	5,188,271		23	3,528,661		0	0		304	1,331,140		594	10,048,072	
Douglas	8	128,000		1	219,000		0	0		3	5,200		12	101,800	
Sierra Vista	16	147,573		0	0		0	0		0	0		18	347,000	
Tombstone	22	70,228		0	0		0	0		46	105,744		68	253,317	
Unincorporated	19	1,130,580		6	733,196		0	0		3	166,170		23	349,618	
Willcox	45	16,845		2	9,245		0	0		197	527,229		248	2,391,005	
COCONINO COUNTY															
Flagstaff	15	3,548,695		9	2,281,000		0	0		18	182,440		35	208,530	
Fredonia	131	77,750		2	145,000		0	0		27	329,791		167	6,159,486	
Page	11	16,154,734		23	934,641		10	2,791,619		10	14,566		23	237,316	
Unincorporated	563	9,560,614		20	737,400		5	596,000		119	1,996,385		715	21,877,379	
Williams	231	1,312,754		0	0		0	0		58	1,132,454		314	12,026,468	
Globe	6	2,900		0	0		0	0		5	21,050		11	23,950	
Hayden	51	5,113,546		0	0		2	68,673		11	432,470		64	1,813,897	
Miami	263	164,920		2	192,641		2	2,084,946		30	399,673		297	7,790,806	
Payson	12	4,252,759		1	4,600		1	42,000		15	10,738		29	222,258	
Unincorporated	250	33,500		13	1,759,677		4	21,988		36	778,310		303	6,812,734	
GILIA COUNTY															
Globe	7	1,250		0	0		0	0		4	9,252		12	392,752	
Hayden	2	1,900		0	0		0	0		2	1,150		4	2,400	
Miami	3	995,686		0	0		0	0		2	2,300		5	4,200	
Payson	101	3,220,463		5	1,258,677		4	21,988		10	401,808		120	2,678,119	
Unincorporated	137	1,441,307		7	559,400		0	0		18	363,800		162	3,755,263	
GRAHAM COUNTY															
Pima	99	43,950		14	495,200		1	4,500		17	583,535		131	2,588,742	
Safford	10	580,300		12	64,200		0	0		8	18,810		18	62,760	
Thatcher	38	311,000		0	0		0	0		6	383,925		56	1,459,425	
Unincorporated	10	506,057		2	64,200		1	4,500		0	0		11	315,500	
GREENLEE COUNTY															
Clifton	41	13,750		0	0		0	0		3	180,800		46	751,057	
Duncan	0	0		0	0		0	0		0	0		4	13,750	
Unincorporated	2	10,000		0	0		0	0		0	0		0	0	
LA PAZ COUNTY															
Parker	2	3,750		0	0		0	0		0	0		2	10,000	
Unincorporated	59	846,783		1	12,000		1	33,165		22	120,516		83	3,750	
MARICOPA COUNTY															
Avondale	9	42,324		1	12,000		0	0		8	7,057		18	61,381	
Buckeye	50	804,459		0	0		1	33,165		14	113,459		65	951,083	
Chandler	6,517	328,853,190		1,232	394,028,138		183	78,747,547		6,065	113,856,464		13,997	915,485,339	
El Mirage	36	597,310		1	234,900		1	280,800		23	90,624		61	1,203,634	
Gila Bend	9	18,000		1	9,000		0	0		7	112,500		17	139,500	
Gilbert	722	37,923,434		35	10,437,158		3	9,865,431		946	19,288,803		1,706	77,214,826	
Glendale	7	129,368		1	31,000		0	0		4	2,700		12	163,068	
Goodyear	3	5,608,488		0	0		0	0		4	850		7	44,400	
Guadalupe	103	16,627,496		13	3,980,601		1	231,636		61	1,985,116		178	11,805,841	
Mesa	344	4,800		195	49,287,465		19	7,043,708		262	9,605,369		820	82,364,038	
Peoria	3	35,473,885		157	61,075,144		N/R	N/R		27	198,228		32	536,028	
Paradise Valley	614	4,450,908		0	0		0	0		N/R	N/R		N/R	N/R	
Phoenix	74	10,852,205		9	1,642,279		1	111,000		81	808,974		155	5,259,882	
Scottsdale	423	84,831,074		393	176,403,694		50	33,281,117		375	1,258,925		808	13,844,409	
Surprise	1,787	56,803,822		126	52,951,082		6	4,034,862		1,577	34,695,997		3,807	329,211,882	
Tempe	492	161,637		11	727,550		4	543,000		431	14,019,271		1,055	127,809,037	
Tolleson	11	17,741,400		125	11,427,500		89	20,216,000		165	4,260,100		42	1,466,271	
Unincorporated	292	57,072,043		1	1,668,985		1	475,000		0	0		671	53,645,000	
Wickenburg	1,582	409,000		163	24,016,780		1	1,700,000		0	0		2	2,143,985	
Youngtown	11	124,770		0	0		2	53,000		1,409	5,662,326		3,155	88,451,149	
	4			0	0		0	0		2	142,068		6	266,838	

Arizona Building Permits: Quarterly Report (continued)

THIRD QUARTER, 1984

	RESIDENTIAL*			COMMERCIAL			INDUSTRIAL			OTHER			TOTAL		
	Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value		Number of Permits	Dollar Value	
MOHAVE COUNTY															
Kingman City	761	14,706,483		57	54,526,688		1	400,000		572	2,189,301		1,391	22,748,472	
Kingman Area	59	976,424		6	1,844,937		0	0		7	25,067		72	2,846,428	
Lake Havasu City	125	1,372,441		7	624,318		1	400,000		160	200,912		293	2,597,671	
Lake Havasu Area	122	5,688,492		6	328,178		0	0		41	186,385		169	6,303,055	
Mohave Valley N.	10	139,986		1	56,252		0	0		9	22,406		20	218,638	
Mohave Valley S.	192	3,413,771		32	2,335,193		0	0		219	1,179,787		443	6,928,751	
Dolan Springs	113	1,577,101		1	48,600		0	0		60	222,500		174	1,848,201	
Sacramento Valley	27	340,960		0	0		0	0		23	40,448		50	381,408	
Mohave General	49	702,846		2	71,280		0	0		44	99,740		95	873,866	
NAVJO COUNTY	64	494,462		2	143,930		0	0		9	112,062		75	750,454	
Holbrook	394	8,347,574		14	1,374,232		0	0		51	1,599,186		459	11,320,992	
Show Low	7	103,100		1	30,000		0	0		1	1,500		9	134,600	
Snowflake	61	1,284,071		3	544,640		0	0		19	933,657		83	2,762,368	
Taylor	20	N/C		0	0		0	0		0	0		20	N/C	
Unincorporated	2	4,000		0	0		0	0		0	0		2	4,000	
Winslow	285	6,551,603		8	784,632		0	0		22	407,529		315	7,743,764	
PIMA COUNTY															
Marana	19	404,800		2	14,960		0	0		9	256,500		30	676,260	
Oro Valley	2,080	59,452,981		144	60,506,649		26	6,579,358		1,717	31,316,493		3,967	157,855,481	
South Tucson	10	N/C		0	0		0	0		3	N/C		13	N/C	
Tucson	18	1,342,800		1	614,880		1	77,520		9	70,102		27	1,412,902	
Unincorporated	3	16,120		1	28,092,663		12	2,836,638		11	24,884		16	733,404	
PINAL COUNTY															
Apache Junction	733	16,542,343		58	31,799,106		13	36,652,200		1,092	20,681,482		1,895	68,153,126	
Casa Grande	1,316	41,551,718		85	3,355,989		3	30,000		602	10,540,025		2,016	87,556,049	
Coolidge	326	3,840,157		25	1,016,356		0	0		215	530,566		569	9,177,024	
Florence	89	1,543,809		6	242,933		0	0		79	532,901		174	3,090,731	
Kearny	28	663,556		5	0		0	0		29	19,000		63	1,449,300	
Mammoth	21	40,200		0	0		0	0		2	6,400		23	59,200	
Superior	9	38,050		0	0		0	0		8	704		17	10,860	
Unincorporated	15	0		0	0		0	0		5	0		20	38,754	
SANTA CRUZ COUNTY															
Nogales	0	0		0	0		0	0		1	22,000		1	22,000	
Paragonia	4	36,356		0	0		0	0		2	1,000		6	37,356	
Unincorporated	160	1,513,726		14	2,096,700		2	20,000		89	838,307		265	4,468,733	
YAVAPAI COUNTY															
Chino Valley	34	1,388,698		0	0		1	350,000		10	355,003		45	2,093,701	
Clarkdale	N/R	N/R		N/R	N/R		N/R	N/R		N/R	N/R		N/R	N/R	
Cottonwood	3	44,000		0	0		0	0		2	159,193		5	203,193	
Jerome	31	1,344,698		0	0		1	350,000		8	195,810		40	1,890,508	
Prescott	726	21,050,543		42	6,887,212		2	134,400		329	4,880,732		1,099	32,952,887	
Prescott Valley	35	365,883		3	93,800		0	0		17	109,100		55	568,783	
Unincorporated	11	367,028		0	0		0	0		11	1,557,276		22	533,324	
Somerton	37	670,108		4	482,326		0	0		11	N/C		52	2,709,710	
Wellton	10	3,000		0	0		0	0		1	3,000		11	3,000	
Yuma	139	4,330,222		16	3,057,038		2	134,400		141	906,384		298	8,478,044	
YUMA COUNTY															
Unincorporated	74	1,791,866		3	153,648		0	0		18	183,736		95	2,129,250	
Somerton	420	13,522,436		16	3,100,400		0	0		130	1,957,940		566	18,580,776	
Unincorporated	291	9,317,598		26	4,607,396		4	678,235		100	3,281,573		421	17,884,802	
Wellton	9	37,170		1	22,000		0	0		2	22,280		12	81,450	
Yuma	214	7,617,552		16	2,158,635		4	678,235		42	671,554		276	11,125,776	
Total, Maricopa Co., 3rd Qtr., 1984															
Total, Maricopa Co., 3rd Qtr., 1983	68	1,662,876		9	2,426,761		0	0		0	0		0	6,677,576	
Percent Change	6,517	328,853,190		1,232	394,028,138		183	78,747,547		56	2,587,939		133	915,485,339	
Total, Arizona, 3rd Qtr., 1984	7,484	300,253,553		923	217,313,365		135	24,729,681		6,065	113,856,464		13,997	605,474,283	
Total, Arizona, 3rd Qtr., 1983	-12	9		33	81		35	218		3	80		51	51	
Percent Change	12,440	476,001,978		1,617	483,071,683		236	89,770,812		9,569	164,329,952		23,862	1,213,174,425	
	13,985	453,566,426		1,217	312,526,340		183	38,470,536		9,771	101,458,918		25,156	906,022,220	
	-11	4		32	54		28	133		-2	61		33	33	

*Includes Mobile Homes
N/R: No Report
N/C: Some communities do not collect dollar valuations.

Arizona New Housing Starts: Quarterly Report

THIRD QUARTER, 1984

BUILDING PERMITS ISSUED

	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	Total Housing Units
APACHE COUNTY	46	14	0	0	0	60
Eagar	10	1	0	0	0	11
St. Johns	10	10	0	0	0	20
Springerville	4	3	0	0	0	7
Unincorporated	22	0	0	0	0	22
COCHISE COUNTY	74	95	0	0	1	178
Benson	0	7	0	0	0	7
Bisbee	2	0	0	0	1	11
Douglas	0	0	0	0	0	0
Huachuca City	0	1	0	0	0	1
Sierra Vista	29	13	0	0	0	42
Tombstone	2	3	0	0	0	5
Unincorporated	40	70	0	0	0	110
Willcox	1	1	0	0	0	2
COCONINO COUNTY	265	118	0	2	0	389
Flagstaff	150	22	0	2	0	178
Fredonia	0	4	0	0	0	4
Page	15	17	0	0	0	32
Unincorporated	97	73	0	0	0	170
Williams	3	2	0	0	0	5
GILA COUNTY	77	66	0	0	4	206
Globe	1	0	0	0	0	1
Hayden	0	0	0	0	0	0
Miami	0	0	0	0	0	0
Payson	20	28	0	0	4	111
Unincorporated	56	38	0	0	0	94
GRAHAM COUNTY	23	33	0	1	0	60
Pima	0	5	0	0	0	5
Safford	12	2	0	1	0	18
Thatcher	6	4	0	0	0	10
Unincorporated	5	22	0	0	0	27
GREENLEAF COUNTY	0	2	0	0	0	2
Clifton	0	0	0	0	0	0
Duncan	0	1	0	0	0	1
Unincorporated	0	1	0	0	0	1
LA PAZ COUNTY	3	33	0	0	0	36
Parker	1	0	0	0	0	1
Unincorporated	2	33	0	0	0	35
MARICOPA COUNTY	4,626	340	62	126	517	13,020
Avondale	15	16	0	0	0	31
Buckeye	1	7	0	0	0	8
Chandler	656	0	0	1	29	1,282
El Mirage	1	1	0	0	0	2
Gila Bend	2	0	0	0	0	2
Gilbert	89	0	2	0	13	257
Glendale	271	12	1	0	156	2,072
Goodyear	0	1	0	0	0	1
Guadalupe	N/R	N/R	N/R	N/R	N/R	N/R
Mesa	559	0	0	11	18	1,297
Paradise Valley	15	0	0	0	0	15
Peoria	349	0	0	0	0	349
Phoenix	1,065	36	57	57	215	4,488
Scottsdale	434	0	1	30	42	865
Surprise	1	8	0	2	0	17
Tempe	208	0	0	8	14	352
Tolleson	0	0	0	0	1	76
Unincorporated	948	258	0	17	29	1,891
Wickenburg	9	1	1	0	0	12
Youngtown	3	0	0	0	0	3

N/R: No Report.

BUILDING PERMITS ISSUED

	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	Total Housing Units
MOHAVE COUNTY	180	349	16	9	7	630
Kingman City	24	16	1	0	0	42
Kingman Area	7	65	0	0	0	72
Lake Havasu City	83	5	15	3	1	139
Lake Havasu Area	1	6	0	0	0	7
Mohave Valley N.	38	91	0	6	6	177
Mohave Valley S.	10	78	0	0	0	88
Dolan Springs	4	14	0	0	0	18
Sacramento Valley	5	27	0	0	0	32
Mohave General	8	47	0	0	0	55
NAVAJO COUNTY	180	49	4	1	0	241
Holbrook	2	2	0	0	0	4
Show Low	15	22	4	0	0	45
Snowflake	9	0	0	0	0	9
Taylor	0	1	0	0	0	1
Unincorporated	148	20	0	1	0	172
Winslow	6	4	0	0	0	10
PIMA COUNTY	885	506	32	7	63	3,309
Marana	1	9	0	0	0	10
Oro Valley	14	0	0	0	0	14
South Tucson	0	0	0	0	0	0
Tucson	249	115	32	7	11	1,148
Unincorporated	621	382	0	0	52	2,137
PINAL COUNTY	67	191	0	4	6	402
Apache Junction	19	59	0	2	0	86
Casa Grande	10	6	0	0	0	16
Coolidge	0	10	0	0	0	10
Eloy	0	3	0	0	0	3
Florence	0	15	0	0	0	15
Kearny	0	0	0	0	0	0
Mammoth	0	0	0	0	0	0
Superior	1	0	0	0	0	1
Unincorporated	37	98	0	2	6	271
SANTA CRUZ COUNTY	27	2	0	0	0	29
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	1	2	0	0	0	3
Unincorporated	26	0	0	0	0	26
YAVAPAI COUNTY	304	196	10	9	6	614
Chino Valley	5	16	0	0	0	21
Clarkdale	3	3	0	0	0	6
Cottonwood	9	15	0	0	0	24
Jerome	0	0	0	0	0	0
Prescott	56	16	0	5	5	129
Prescott Valley	35	17	8	3	0	71
Unincorporated	196	129	2	1	1	363
YUMA COUNTY	116	114	2	2	5	302
Somerton	0	2	0	0	0	2
Unincorporated	96	98	0	0	0	194
Wellton	0	0	0	0	0	0
Yuma	20	14	2	2	5	106
Total, Maricopa Co., 3rd Qtr., 1984	4,626	340	62	126	517	13,020
Total, Maricopa Co., 3rd Qtr., 1983	5,070	453	123	168	403	11,315
Percent Change	-8	-24	-49	-25	28	15
Total, Arizona, 3rd Qtr., 1984	6,873	2,108	126	161	609	19,478
Total, Arizona, 3rd Qtr., 1983	7,669	2,185	172	208	436	18,320
Percent Change	-10	-3	-26	-22	39	6

A Survey of Arizona Business Conditions

HAROLD FEARON

SEPTEMBER

The economy continued its cooling-off process in September, according to data from the monthly business survey of the purchasing management associations of Arizona and southern Arizona. While all indicators of economic performance again were positive, pushing the expansion into its 20th month, the increases were modest, in line with the more subdued growth rate of the summer months. The inflation rate also continued to moderate.

The slower pace of economic growth will extend at least through the end of the year. However, the moderation from the fast-forward pace of the first half of 1984 is not likely to be a prelude to any major drop-off during the fourth quarter. The more orderly pace of economic expansion will keep the inflation rate under control.

Now beginning its 23rd year of monthly reporting on the condition of the Arizona economy, the purchasing business survey uses data gathered through a questionnaire sent at the close of each month to purchasing managers statewide. It asks them to indicate the direc-

tion of activity — higher, unchanged, or lower — on seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace. Their aggregate readings have accurately charted the course of the current economy over the past two decades and have provided data on turning points several weeks earlier than comparable government data.

Prices

Prices paid for major purchased items increased again in September but at the lowest rate since April 1983 (18 months ago). Thirty percent of the purchasing managers paid higher prices in September than in August; 10 percent enjoyed lower prices; while a very large 60 percent said prices were unchanged. Price increases have followed a decided slowing trend over the past three months, and inflation probably will remain in check over the balance of 1984 and into 1985.

Delivery Time

Delivery time on shipments from vendors stretched a bit further in September but at a slightly lower rate than in August and at the smallest rate since March 1983. This indicator began to show definite slowing last June, as firms no longer had a large backlog of unfilled orders. Longer vendor lead times were reported by 31 percent of the firms; 9 percent received faster deliveries.

Dr. Fearon is the National Association of Purchasing Management Professor in the College of Business, Arizona State University.

Inventory Levels

Inventory levels experienced a very slight up-tick, with the number of managers adding to stocks (32 percent) almost balanced by the number who reduced inventory (27 percent). Inventory has remained static for the past three months, and stock building no longer is adding fuel to the expansion.

New Orders

New orders went up again in September at a rate that has remained nearly the same during the past four months. This was the 21st consecutive month of new order growth, with 41 percent saying their firm booked more new business in September than in August, and only 20 percent reporting a shrinkage of their order books. While the expansion continued in September, the rate was down substantially from the hectic increases of January through May of this year.

Production

Production increased, in line with the more moderate new order growth. Thirty-five percent of the firms boosted output; 18 percent cut back. The September increase rate was about half as large as increases during each of the first six months of 1984.

Employment

Employment improved in September, for the 20th month in a row. The increase rate was slightly larger than in August but well under the earlier months of 1984. Twenty-nine percent of the firms added to their work force, compared to 13 percent that pared payrolls.

Purchases

Purchases of materials, supplies, and services by Arizona firms rose in September at a slightly greater rate than in August but well under the growth rates during the first half of 1984. Forty-five percent increased their purchase commitment rate, while 18 percent reduced their buying. The advances of this indicator have been moderate over the past four months.

TABLE 1
SEPTEMBER PURCHASING SURVEY

Percent of Purchasing Managers
Indicating Each Response
(September compared to August)

Key Indicators	Higher	Same	Lower
Prices paid for major commodities	30	60	10
Delivery time from vendors	31	60	9
Purchased materials inventory level	32	41	27
New orders received	41	39	20
Production	35	47	18
Employment	29	58	13
Purchases	45	37	18

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

OCTOBER

The Arizona economy continued to cool down in October. While all of the indicators of economic performance were positive for the 21st consecutive month, the aggregate upward thrust was slight. The rate of growth was at its lowest point since January 1983, the first month of recovery following the 1981-82 recession. Again, there was good news on prices; only a marginal increase was recorded in October — the smallest since February 1983. We appear to be entering a period of relative price stability.

Moderate growth will occur between now and the end of the year. If interest rates drop during the next month, as now appears likely, an aggregate economic decline in November and/or December probably can be avoided. While almost all of the steam has gone out of the upswing, 1985 will start from a very high performance base.

Prices

Prices paid for major purchased items went up again in October but at the smallest increase rate of the past 20 months (since February 1983). Twenty-one percent of the purchasing managers paid higher prices in October than in September; 12 percent enjoyed lower prices; while a very large 67 percent said prices were unchanged. The price increases have moderated each month, beginning last July, and the October increase was less than half that of September. It appears that the Arizona economy will continue to enjoy a period of price stability extending well into 1985.

Delivery Time

Delivery time on shipments from vendors stretched again in October but at the lowest rate since March 1983 (19 months ago). Longer delivery times were reported by 27 percent of the purchasing managers, compared to 12 percent who received faster delivery service. The stretch-out has gotten smaller over each of the past three months, and it is well under those of the first half of 1984. Vendor backlogs no longer are building, and buyers now can expect reasonably prompt service on orders placed.

Inventory Levels

Inventory levels increased very slightly, with 31 percent of the firms adding to stocks, compared to 28 percent that cut inventory. Inventory has been almost stable during the past four months and is not adding impetus to growth. However, there also is no inventory overhang that could put the economic recovery in jeopardy.

New Orders

New orders were still positive, with 38 percent saying their firm booked more new business in October than in September, while 24 percent saw their order books contract. This was the smallest increase since January 1983; the increase rate has been declining steadily since May. This probably is the best single indicator of the loss of momentum experienced by the economy during the second half of 1984.

Production

Production improved again in October, at the same rate as in September, with 37 percent of the firms increasing output, compared to 20 percent that cut production. The production increases in August, September and October were lower than in any month since January 1983. Assuming that the new order rate will continue to moderate over the next several months, as it likely will, production increases will follow a downward path; they could even turn negative by the end of the year.

Employment

Employment went up again in October, for the 21st month in a row, but at approximately half the September increase rate and by the smallest amount since January 1983. Twenty-three percent of the firms added to their work force, while 14 percent pared payrolls. Thus, Arizona's employment picture remains bright, although further increases between now and the end of the year likely will be small.

Purchases

Purchases of materials, supplies and services by Arizona firms increased again, with 44 percent of the firms adding to their purchase commitments, while 25 percent cut back. The increase rate on this indicator has remained the same over each of the past three months; these were the smallest increase rates since this data series was begun in March 1983.

TABLE 2
OCTOBER PURCHASING SURVEY

*Percent of Purchasing Managers
Indicating Each Response
(October compared to September)*

<i>Key Indicators</i>	<i>Higher</i>	<i>Same</i>	<i>Lower</i>
Prices paid for major commodities	21	67	12
Delivery time from vendors	27	61	12
Purchased materials inventory level	31	41	28
New orders received	38	38	24
Production	37	43	20
Employment	23	63	14
Purchases	44	31	25

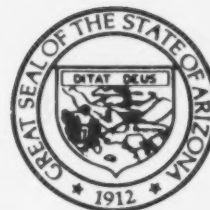
Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

Arizona Business Scene



1982 Census of Retail Trade

TOM R. REX



Retail trade is an important industry to the Arizona economy. Together with wholesale trade, it is the state's second largest industry, contributing \$6 billion to the Gross State Product in 1983, 16.7 percent of total GSP. Approximately two-thirds of this \$6 billion can be traced to retail trade. The data that follow are taken from the 1982 Census of Retail Trade, one of a series of economic censuses undertaken by the U.S. Bureau of the Census every five years. Information from the censuses taken at the end of 1982 is just now becoming available.

Several kinds of businesses constitute Arizona's retail trade industry:

- Building materials, hardware, garden supplies, and mobile home dealers. The building materials segment accounts for two-thirds of this category's sales but for less than one-half of its establishments.

- General merchandise (department and variety stores). Department stores are responsible for nearly 90 percent of this category's sales but for only one-fourth of its establishments.

- Food stores. Grocery stores generate nearly all of this group's sales and constitute 80 percent of its establishments.

- Automotive dealers. New and used car dealers make 80 percent of this group's sales, but auto and home supply stores account for more than one-half of its establishments.

- Gasoline service stations.

- Apparel and accessory stores. With 40 percent of both sales and establishments, women's clothing stores are this category's largest business.

- Furniture, home furnishings, and equipment stores. This category is divided among furniture stores; radio, television and music stores; and home furnishing stores.

- Eating and drinking places. Eating places represent 80 percent of the establishments and produce 90 percent of the sales in this category.

- Drug and proprietary stores. Drug stores constitute nearly all of this category.

- Miscellaneous retail stores. This category includes liquor stores, used merchandise stores, non-store retailers, and specialty stores such as sporting goods outlets.

Summary Statistics of All Retail Establishments

A total of 24,153 retail firms were operating in Arizona at the end of 1982, an increase of 19 percent since the 1977 census. Less than one-half of those firms were incorporated, and only two-thirds had a payroll (see Table 1). More than one-half of Arizona's retail establishments were single proprietorships, many of which had no employees. Much of the information in the census was gathered only from the 16,069 firms that had a payroll.

Establishments with a payroll had average 1982 sales of \$845,476, compared to an average of only \$38,138 for firms without a payroll. Little variation existed across Arizona in average sales of firms without a payroll, but firms with a payroll were larger in the Phoenix metropolitan area and smaller in the non-metropolitan areas.

The Phoenix area's share of Arizona's \$13.6 billion in retail sales by firms with a payroll was 62 percent. (Firms without a payroll contributed only an additional \$0.3 billion in sales.) Arizona's retail sales volume grew 71 percent between 1977 and 1982. Most of this increase was due to inflation, which amounted to 59 percent nationally and 69 percent in the Phoenix area.

Per capita retail sales in Arizona for 1982, using 1980 census populations, was \$5,112. This figure was highest in the Phoenix area and lowest in the non-metropolitan areas (see Table 1). Because of the large volume of retail items purchased by tourists (estimated at \$1.8 billion in 1980), the true value of goods purchased by Arizona residents was somewhat less.

The retail trade industry employed nearly 200,000 workers during March 1982, an average of 12 employees per establishment. Sales per employee in 1982 averaged \$68,560. The payroll for these employees exceeded \$1.6 billion, an average of \$8,440 per worker. Average pay in this industry is relatively low because of the large number of part-time workers.

Summary Statistics by Kind of Business

More eating and drinking places operate in Arizona than any other kind of retail business (see Table 2). While this category accounted for 26 percent of all retail establishments, it was responsible for only 10 percent of the industry's sales. Food stores constituted the second largest number of establishments, providing one-fourth of the state's retail sales.

Since most department stores are large, the category of general merchandise stores generated the greatest sales per establishment, \$3.5 million. Automotive dealers were the next highest dollar-volume retail

business, averaging \$2.2 million in sales. The least sales per establishment were made by eating and drinking places and by miscellaneous retail stores.

Sales of gasoline service stations grew most rapidly between 1977 and 1982, more than doubling. Sales of drug and proprietary stores grew 91 percent. With less than a 50 percent increase in sales, the retail component that includes building materials grew the least. General merchandise stores and automotive dealers each had less than a 60 percent rise in sales.

More than twice the number of workers were employed by eating and drinking places than by food stores, with general merchandise stores employing the third largest number. However, general merchandise stores averaged 55 employees per store, far more than the average of 17 employees per establishment for eating and drinking places.

Sales per employee were highest at gasoline service stations, \$173,000, and at automotive dealers, \$167,000, more than double the retail industry average. Eating and drinking places had the lowest volume of sales per employee, at \$20,000.

The payroll of eating and drinking places in 1982 was only slightly greater than that of food stores; each group accounted for a little more than 20 percent of the retail payroll. The lowest average payroll per employee, \$5,000 for workers at eating and drinking places, was less than one-third the average at automotive dealers.

The statistics presented in this article illustrate the diversity found within the retail trade industry. Similar data will be disseminated by the Census Bureau on wholesale trade, the service industry, the construction industry, manufacturing, the mineral industry, and transportation. An agricultural census was also conducted in 1982.

TABLE 1
1982 RETAIL TRADE SUMMARY STATISTICS

	<i>Arizona</i>	<i>Phoenix MSA*</i>	<i>Tucson MSA*</i>	<i>Rest of State</i>
Total number of establishments	24,153	13,216	4,500	6,437
Percent incorporated	43	46	47	32
Percent with payroll	67	66	71	66
Total sales, establishments with payroll (in billions of dollars)	13.6	8.4	2.5	2.7
Sales per establishment (in thousands of dollars)	845	966	801	632
Sales per capita	5,112	5,656	4,881	4,081
Number of employees (in thousands)	198	120	40	39
Employees per establishment with payroll ...	12	14	13	9
Sales per employee	68,560	69,959	63,727	69,227
Total payroll (in millions of dollars)	1,672	1,051	330	292
Payroll per employee	8,440	8,786	8,261	7,553

*MSA = Metropolitan Statistical Area

Source: 1982 Census of Retail Trade, Geographic Area Series: Arizona, U.S. Department of Commerce, Bureau of the Census.

TABLE 2
ARIZONA RETAIL TRADE BY KIND OF BUSINESS
(Establishments With Payroll, 1982)

	<i>Number of Establishments</i>	<i>Sales in Billions</i>	<i>Payroll in Millions</i>	<i>Number of Employees</i>
Building materials, hardware, garden supply, mobile home dealers	685	\$ 0.7	\$ 80	7,293
General merchandise stores	426	1.5	191	23,475
Food stores	1,959	3.4	350	31,572
Automotive dealers	1,156	2.6	253	15,389
Gasoline service stations	1,204	1.3	62	7,544
Apparel and accessory stores	1,468	0.5	72	9,615
Furniture, home furnishings, and equipment stores	1,243	0.6	89	7,497
Eating and drinking places	4,191	1.4	360	71,448
Drug and proprietary stores	502	0.5	61	6,037
Miscellaneous retail stores	3,235	1.1	155	18,292
TOTAL*	16,069	\$13.6	\$1,672	198,162

*Totals may not add due to rounding

Source: 1982 Census of Retail Trade, Geographic Area Series: Arizona, U.S. Department of Commerce, Bureau of the Census.

Arizona Gross State Product Second Quarter, 1984

TOM R. REX

The Arizona Gross State Product (GSP) rose at an inflation-adjusted rate of 8.7 percent during the second quarter, 1984, extending the rapid expansion of the Arizona economy to a sixth consecutive quarter. This growth rate was lower than expected, however — only one-half the rate of the first quarter, 1984.

The slower second quarter growth can be attributed largely to the state's agricultural and manufacturing sectors. Agricultural GSP dropped sharply, mainly due to seasonal factors and to changes in the federal government's payment-in-kind program. Manufacturing GSP grew only slightly, following five consecutive quarters of at least 13 percent increases.

Second quarter GSP growth was led by large gains both in trade and in finance, insurance, and real estate, major sectors that each account for at least 17 percent of the total GSP. Continued rapid growth in the construction and mining industries also contributed to the overall expansion. Although mining sector output is gradually recovering from the severe 1982 recession, the mining GSP remains below its 1981 peak.

Increases in the productivity of Arizona workers continued to contribute to GSP growth during the second quarter. Annualized output per employee rose 6.4 percent, the fifth large gain of the last six quarters. The mining sector posted the greatest gain in output per employee.

Employment growth in Arizona maintained an annualized rate between 5 and 6 percent during the second quarter. The most significant advances occurred in the construction sector; mining and government employment declined slightly.

TABLE 1
ARIZONA GROSS STATE PRODUCT

Quarter	Billions of Current Dollars, Annualized	Billions of 1972 Dollars, Annualized	Annualized Percent Change (1972 Dollars)
First, 1982	\$32.458	\$16.596	- 14.6%
Second, 1982	32.776	16.523	- 1.8
Third, 1982	32.458	16.319	- 4.9
Fourth, 1982	32.358	16.103	- 5.3
First, 1983	33.730	16.601	12.4
Second, 1983	35.705	17.535	22.5
Third, 1983	37.270	18.156	14.2
Fourth, 1983	38.145	18.496	7.5
First, 1984	39.752	19.302	17.4
Second, 1984	40.833	19.724	8.7

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in co-sponsorship with the ASU College of Business Dean's Council of 100.

Arizona GSP continued to grow more rapidly than the Gross National Product (GNP), which increased at a slower rate of 7.1 percent during the second quarter from 10.1 percent during the first quarter. GNP growth during the third quarter was less than 2 percent, suggesting that GSP growth will also continue slowing. GNP growth of less than 3 percent is slower than the long-term historical average. If this slower growth were to continue during the fourth quarter, the national economy would be in a "growth recession," a situation in which the economy expands at such a sluggish pace that unemployment begins to rise.

In Arizona, the long-term average GSP growth rate is 5.5 percent. While expansion of the Arizona economy during the second half of 1984 may fall below this rate, it is likely to remain well above the national rate of growth. The Arizona unemployment rate probably would not be much affected by slower growth in the 3-to-5 percent range.

Even if expansion of the Arizona economy slows during the second half of 1984, average growth for the entire year probably will exceed 11 percent. The greatest growth during any prior year was 10.7 percent in 1978.

Metropolitan Phoenix Consumer Price Index Third Quarter, 1984

TOM R. REX

Prices of goods and services in the Phoenix metropolitan area rose 1.7 percent during the third quarter, 1984, the fifth increase in the last six quarters that has been between 1.5 and 1.9 percent (see Table 1). The third quarter, 1984, index for all items, 183.1 on a 1977 = 100 base, is 5.7 percent higher than it was one year ago.

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Bureau of Business and Economic Research, College of Business, Arizona State University. The quarterly CPI results from comprehensive surveys conducted by the Bureau in cooperative cosponsorship with Valley National Bank.

Price increases during the third quarter were more broadly based than they have been in most recent quarters. Higher inflation in housing costs was offset by a smaller gain in the transportation category. The other major category, food and beverages, continued to post relatively small increases.

Food and Beverages

The modest second quarter advance of 1.0 percent was led by a 4.0 percent boost in the prices of alcoholic beverages. The food at home and food away from home components gained less (see Table 2).

Most of the inflation for food purchased at grocery stores was caused by a 3.8 percent surge in the index for fruits and vegetables; fresh fruit prices climbed a seasonal 14.0 percent. The meats, poultry, fish, and

eggs category advanced slightly, as the largest increase in nearly four years in pork prices was offset by a 27.8 percent decline in the price of eggs, the largest in the history of the Phoenix CPI. The indexes for cereal and bakery products and other food at home recorded small increases, while the index for dairy products declined.

Housing

The housing index again recorded its largest advance in more than two years due to gains throughout the category. Renters' costs rose 2.3 percent, although the rent of a dwelling increased only 1.1 percent. Homeowners' costs rose 1.4 percent; while this is a moderate gain, it is more than in any quarter since the new methodology became effective in 1983. The third quarter increase was a record for home maintenance commodities and the largest in more than eight years for household furnishings and operations. Fuel and other utility costs continued to experience moderately large increases (1.9 percent).

Transportation

The smaller increase during the third quarter in the transportation category was somewhat misleading since several components experienced large gains. However, prices for new cars and gasoline fell, the latter by 6.7 percent. Components with large increases included used cars, which are now 19.6 percent more expensive than they were one year ago; vehicle parts and equip-

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

Expenditure Category	Relative Importance	Percent Change from Preceding Quarter						
		1st 1983	2nd 1983	3rd 1983	4th 1983	1st 1984	2nd 1984	3rd 1984
ALL ITEMS.....	100.0	0.2	1.7	1.6	0.5	1.9	1.5	1.7
Food and Beverages.....	19.0	2.3	1.5	-0.1	0.4	1.8	0.7	1.0
Housing.....	38.9	-0.5	1.8	0.9	-0.2	0.6	2.0	2.3
Apparel and Upkeep.....	4.8	0.6	1.8	1.0	1.7	2.5	-1.3	-0.1
Transportation.....	21.9	-1.9	2.5	3.3	0.5	1.6	2.3	1.2
Medical Care.....	6.6	3.0	1.0	4.7	2.0	11.4	1.1	3.0
Entertainment.....	4.6	1.7	-2.1	-0.2	2.9	1.1	2.3	2.6
Other Goods and Services.....	4.2	2.6	2.7	4.7	0.5	0.8	1.1	2.1

Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank.

ment, with an 11.0 percent jump that did not completely offset five successive quarters of decline; vehicle maintenance and repair, a category in which prices rose 8.8 percent — the largest gain in more than seven years; and public transportation, with an increase of 9.1 percent.

Medical Care

The pattern of alternating quarters of large and small advances in the medical care index continued, with a 3.0 percent third quarter rise following a more modest 1.1 percent second quarter gain. Hospital costs, however, remained nearly stable for the fourth consecutive quarter. The third quarter gain in medical care was due mostly to higher fees for professional services as well as to higher prices for drugs and medical supplies. Health insurance premiums rose only 2.1 percent but were still 41.7 percent higher than they were one year ago.

Other Categories

The index for apparel and upkeep fell for the second consecutive quarter as price declines for women's and girls' apparel, jewelry and luggage, and apparel services offset gains for men's and boys' apparel. Entertainment costs rose 2.6 percent in the third quarter, with price increases for reading materials primarily responsible. An advance in the other goods and services category was larger than it was in the previous three quarters.

Comparison Areas

The third quarter inflation rate in the Phoenix metropolitan area was once again higher than the national average. The Valley experienced greater increases in all categories except apparel and upkeep and food and beverages.

These larger increases during the last year have pushed the inflation rate higher in the Phoenix area than in each of the comparison areas (see Table 3). Metropolitan Phoenix inflation since third quarter, 1983, has been greater than in each of the comparison areas for apparel and upkeep, transportation, medical care, and entertainment.

Outlook

The annual inflation rate continues to remain stable between 5.5 percent and 6 percent in the Phoenix area and between 4 percent and 4.5 percent nationally. Generally, inflationary pressures increase at this phase of the economic cycle. However, most indicators do not currently signal higher inflation; many forecasters expect it to rise only slightly in 1985.

The higher inflation rate in the Phoenix area continues a relationship that has been in effect since the mid-1970s: During recessions and recoveries from recessions, the inflation rate has been lower than the national average; during economic expansions, it has been higher. Many economists believe that rapid economic growth accompanied by low levels of unemployment re-

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
THIRD QUARTER, 1984
(1977 = 100)

<i>Expenditure Category</i>	<i>Last Qtr. Index</i>	<i>This Qtr. Index</i>	<i>Percent Change</i>	<i>Year-Ago Change</i>
ALL ITEMS.....	180.1	183.1	1.7	5.7
Food and Beverages.....	164.1	165.7	1.0	3.9
Food.....	165.0	166.2	0.7	4.1
Food at Home.....	162.8	164.0	0.8	4.0
Cereal and Bakery Products.....	171.8	172.5	0.4	5.1
Meats, Poultry, Fish, and Eggs.....	156.1	156.4	0.2	3.7
Dairy Products.....	156.0	154.1	-1.2	1.5
Fruits and Vegetables.....	171.2	177.7	3.8	5.5
Other Food at Home.....	152.8	153.9	0.7	4.0
Food Away from Home.....	166.5	167.7	0.7	4.3
Housing.....	188.7	193.0	2.3	4.8
Shelter.....	199.8	203.8	2.0	4.5
Renters' Costs**.....	106.6	109.1	2.3	7.3
Homeowners' Costs**.....	101.9	103.3	1.4	3.1
Fuel and Other Utilities.....	174.3	177.6	1.9	7.9
Gas (piped) & Electricity.....	196.9	201.1	2.1	6.9
Household Furnishings and Operations.....	142.7	147.7	3.5	3.0
Apparel and Upkeep.....	140.0	139.8	-0.1	2.7
Transportation.....	177.4	179.6	1.2	5.7
Private Transportation.....	174.8	175.8	0.6	5.7
New and Used Cars.....	185.5	190.5	2.7	12.2
Motor Fuels.....	201.1	187.7	-6.7	-4.7
Public Transportation.....	221.5	241.6	9.1	5.9
Medical Care.....	226.9	233.7	3.0	18.2
Entertainment.....	167.3	171.7	2.6	9.1
Other Goods and Services.....	160.8	164.2	2.1	4.6

An ** indicates that the base period is second quarter, 1983.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank.

sults in greater inflationary pressure. This seems to be true in the Phoenix area, where the economy grows much more rapidly during economic expansions than the national economy, with lower unemployment. The result has been higher inflation. Currently, the unemployment rate in Maricopa County is only 3.2 per-

cent, while the national rate is 7.4 percent. Inflation-adjusted growth in the Arizona Gross State Product is expected to exceed 11 percent during 1984, compared to less than 7 percent expected growth in the Gross National Product.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
THIRD QUARTER, 1984

<i>Expenditure Category</i>	<i>Percent Change from Last Quarter</i>		<i>Percent Change from One Year Ago</i>			
	<i>Phoenix</i>	<i>United States</i>	<i>Phoenix</i>	<i>United States</i>	<i>Denver</i>	<i>San Diego</i>
ALL ITEMS.....	1.7	1.1	5.7	4.2	4.2	4.8
Food and Beverages.....	1.0	1.1	3.9	4.2	5.0	3.7
Housing.....	2.3	1.5	4.8	4.5	5.0	5.5
Apparel and Upkeep.....	-0.1	0.6	2.7	1.4	0.0	-0.7
Transportation.....	1.2	0.2	5.7	3.5	2.3	5.0
Medical Care.....	3.0	1.3	18.2	6.1	5.5	7.8
Entertainment.....	2.6	1.1	9.1	4.0	3.0	1.3
Other Goods and Services.....	2.1	1.3	4.6	6.3	7.3	8.0

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cooperative cosponsorship with Valley National Bank; other data from U.S. Department of Labor, Bureau of Labor Statistics.

ARIZONA SALES OF ELECTRICAL POWER
(In Millions of Kilowatt Hours)

	1984	1983	<i>Percent Change From Prior Year</i>	<i>Percent Change From Prior Month</i>
August.....	3615.1	3313.0	+ 9.1%	- 0.5%
September.....	3178.0	3196.9	- 0.6	- 12.1
October.....	2144.8	2318.6	- 7.5	- 32.5

Source: Arizona Power Authority (based on reports from major suppliers).

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Inflation Rate Accelerates in 1984

Consumer prices in the Phoenix metropolitan area jumped an average of 5.8 percent in 1984, ending the moderating trend in consumer price inflation that had begun in 1981. While this gain was a substantial acceleration from the 1.6 percent increase in 1983, it can be viewed as moderate when considering the rapid growth in the Arizona economy during 1984 and in comparison with the inflation rate at comparable stages of previous economic cycles (see Figure 1). Further, the inflation rate stabilized at this higher level, showing no upward trend during 1984.

Several methods can be used to calculate the inflation rate from the consumer price index (CPI). In this article, the annual average percent change is used: the average of the four quarterly index values for a year, compared to the average of the previous year. The other widely used method is employed in the quarterly CPI reports (see "Valley Inflation Slows," opposite). In this method, the index value at the end of the year is compared to the value at the

end of the previous year. Because of a stable inflation rate during 1984, the two methods measure nearly identical rates.

CONSUMER PRICES IN 1984

Only two of the seven major categories in the metro Phoenix CPI did not post a larger gain in 1984 than in 1983: prices of food and beverages were stable at a 3.5 percent annual rate, and prices of other goods and services increased much less than in 1983. While certain items, such as

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used cars and health insurance, contributed more heavily to higher inflation.
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Valley Inflation Slows in Fourth Quarter

Prices of goods and services in the Phoenix metropolitan area rose 0.7 percent during the fourth quarter, the smallest quarterly increase of 1984 (see Table 1). The fourth quarter 1984 index, 184.4 on a 1977 = 100 base, is 5.9 percent higher than it was one year ago.

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Bureau of Business and Economic Research in the College of Business, Arizona State University. Comprehensive pricing
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tion rates in 1984, most components of the other five major categories added to the acceleration as well.

The low increase in 1984 housing costs, 4.1 percent, was still a sharp change from the 1.8 percent decrease in 1983. Shelter costs, for both homeowners and renters, posted larger gains in 1984, as did fuel and other utility costs, although electricity rate increases remained minimal. The apparel and upkeep and the entertainment categories also recorded higher, but moderate, gains in 1984.

The two categories most responsible for higher 1984 inflation were transportation and medical care. The transportation index rose 7.3 percent, led by larger advances in the indexes for used cars (20.6 percent), vehicle insurance (12.4 percent) and public transportation (9.7 percent). After a 7.8 percent decline in 1983, gasoline prices rose a slight 1.6 percent during 1984.

The medical care index surged 19.3 percent in 1984, despite slower advances in four of the five subcategories. The gain in the hospital index decelerated from 14.8 percent in 1983 to 4.7 percent in 1984. However, the health insurance index ballooned 47.7 percent, following a rise of 25.0 percent in 1983.

COMPARISON TO OTHER AREAS

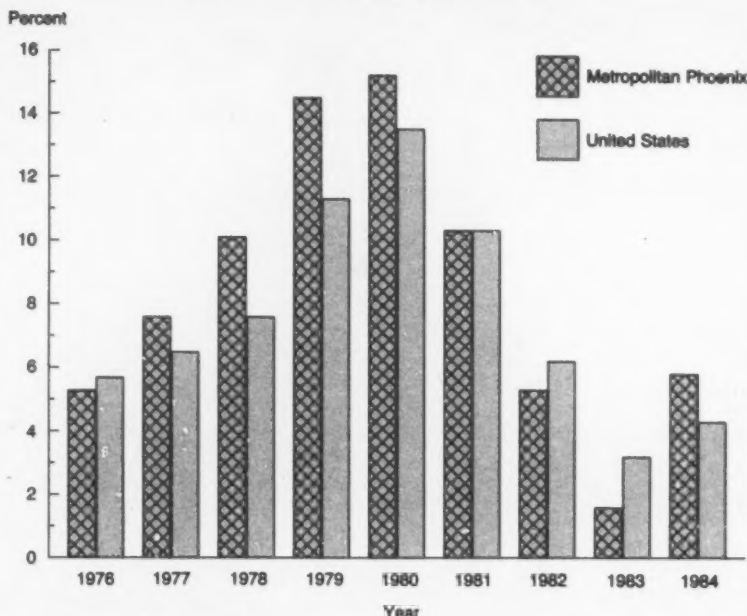
Inflation in the Phoenix area during 1984 was approximately one-third higher than the national average, with one-half of the difference due to the swelling of Phoenix health insurance premiums. Nevertheless, the overall inflation rate was higher in San Diego than in Phoenix, as shown in Table 2.

The higher inflation in Phoenix during 1984, compared to the national average, continued the area's pattern of higher inflation than experienced by the nation as a whole during economic expansions. Higher inflation is a result of Phoenix's superior growth and low unemployment rate.

INFLATION FORECASTS

With the start of 1985, economic forecasters and econometric forecasting services have issued their national inflation predictions. In its December 31, 1984, issue, *Business Week* presented 1985 forecasts by 26 economists and 14 econometric services, which ranged from a 2.3

FIGURE 1
METROPOLITAN PHOENIX AND U.S. CONSUMER PRICE INDEXES
Annual Percent Changes, 1976-1984



Source: Bureau of Business and Economic Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

TABLE 1
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
(1977 = 100)
Selected Items

Category	Relative Importance ¹	Annual Average Index 1984	1983	Percent Change
ALL ITEMS	100.0%	181.2	171.3	5.8%
Food and Beverages	19.0	164.7	159.1	3.5
Food	17.7	165.3	159.6	3.6
Food at Home	11.5	163.2	158.2	3.1
Food Away from Home ..	6.2	166.7	159.6	4.4
Housing	38.9	189.9	182.4	4.1
Shelter	24.6	202.1	194.1	4.2
Fuel and Other Utilities ...	6.5	170.0	158.3	7.4
Household Furnishings and Operations	7.9	145.1	142.9	1.5
Apparel and Upkeep	4.8	140.5	135.4	3.8
Transportation	21.9	178.5	166.3	7.3
Private Transportation	20.2	175.2	163.6	7.1
Public Transportation	1.6	233.8	213.1	9.7
Medical Care	6.6	231.3	193.8	19.3
Entertainment	4.6	166.7	159.5	5.8
Other Goods & Services	4.2	162.5	152.7	6.4

¹ Expressed as a percent of all items. The relative importance of the seven major categories sums to 100.0 percent. Only selected detail items are shown; thus, the relative importance of these items will not necessarily sum to that of the major categories.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in cosponsorship with Valley National Bank.

percent to a 7.0 percent national inflation rate in 1985, with a consensus forecast for a 4.4 percent rate.¹ The Economic Unit at *U.S. News and World Report* was somewhat more optimistic, forecasting an increase of 3.7 percent in consumer prices dur-

ing 1985.²

Based on more recent economic data, the January forecast by the widely used Data Resources, Inc. (DRI) econometric forecasting service is also for lower inflation — a 3.5 percent rise in the national CPI

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE METROPOLITAN AREAS
1984 Annual Average Percent Change

Expenditure Category	Phoenix	United States	Denver*	San Diego*
ALL ITEMS	5.6%	4.3%	3.9%	6.0%
Food and Beverages	3.5	3.8	4.9	4.7
Housing	4.1	4.1	3.3	6.6
Apparel and Upkeep	3.8	1.9	1.1	4.2
Transportation	7.3	4.5	3.8	7.0
Medical Care	19.3	6.2	6.0	5.5
Entertainment	5.8	3.7	2.6	2.2
Other Goods & Services	6.4	6.7	7.9	8.1

*Estimated

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data from the U.S. Department of Labor, Bureau of Labor Statistics.

for 1985 and a slight acceleration in the inflation rate to 3.9 percent in 1986. This DRI forecast is based on assumptions that another good year lies ahead, with real GNP growth of 3.0 percent in 1985; continuing consumer confidence in the strength of the economy; no change in monetary policy; and moderate cuts in federal spending by Congress.³ The Forecasting Center of the U.S. Chamber of Commerce also predicts a national inflation rate of 3.5 percent for 1985 but expects a larger uptick in 1986 to 4.5 percent.⁴

This favorable outlook for inflation reflects expectations of moderate wage increases, increasing productivity, declining oil prices, little pressure from other commodity prices, and a continuing flow of relatively low-priced imported goods into the United States, due to the strong dollar. Although unemployment has fallen sharply since its peak during the last recession, the recovery does not yet seem to have generated pressure for wage increases. In many parts of the country, unemployment remains well above the lowest rates reached during previous expansions. Furthermore, in many industries, the bargaining power of labor has been substantially weakened by deregulation and/or competition from foreign goods. As a result, the unit labor costs of non-farm businesses increased only 1.4 percent in 1984 and are forecast to rise another small 2.8 percent in 1985.

With last fall's improved harvests, the January DRI forecast is for a 2.3 percent decline in wholesale farm prices, despite the higher fruit and vegetable prices resulting from the

January freeze in the Southeast.⁵ OPEC has been forced to lower oil prices, and the strong dollar has generally kept commodity prices depressed. These conditions are expected to continue and should restrain energy and raw material prices for the remainder of the year.

The 1985 rise in consumer prices in the Phoenix metropolitan area is forecast to follow the pattern of previous economic expansions, in which the regional inflation rate has exceeded the national average. A 1985 increase of 5.7 percent in the Metropolitan Phoenix CPI is predicted by the Bureau of Business and Economic Research.⁶ This slight decrease from the 1984 rate is in line with the decline forecast for the nation as a whole.

— Tom R. Rex
Research Manager

— Timothy D. Hogan

Dr. Hogan is Professor of Economics in the ASU College of Business. He is also Director of the State Data Center.

¹"The Economy: An Expansion Without the Explosions," *Business Week* (December 31, 1984): 66-67.

²"Business: More Good Times Ahead," *U.S. News and World Report* (December 31, 1984/January 17, 1985): 56-60.

³Data Resources, Inc., *U.S. Forecast Summary* (February 1985).

⁴"Ahead: A Soft Landing Onto Firmer Ground," *Nation's Business* (January 1985): 10-15.

⁵Data Resources, Inc., *U.S. Forecast Summary* (February 1985): 4.

⁶Luke Koons and Tom R. Rex, "Forecasting Arizona Economic Activity," *Arizona Business* (Fourth Quarter, 1984): 10-14.

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surveys are conducted each quarter by the Bureau in cosponsorship with Valley National Bank.

COMPONENT INDEXES

The 0.7 percent fourth quarter increase was almost entirely due to gains in the transportation and medical care indexes; a 2.2 percent increase in the transportation component was responsible for two-thirds of the advance. The higher transportation index was a result of higher gasoline prices (after a decline during the third quarter), the largest rise since 1976 in vehicle insurance rates, and continued increases in used car prices. However, the fourth quarter gain of 1.9 percent in the used car index was much smaller than in the previous three quarters. In the medical care index, increases in health insurance premiums caused almost the entire advance, as during the first two quarters of 1984.

Improvement in the overall index over the 1.7 percent third quarter gain resulted largely from a sharp deceleration in the housing and food and beverages categories, although fourth quarter inflation was lower in all components except transportation and apparel and upkeep. In many cases, the fourth quarter improvement was due to seasonal factors. In the housing index, for example, the seasonal drop in electricity rates, combined with declines in utility gas rates and in prices of household furnishings and operations, more than offset gains in the shelter component. Seasonality also explains the slight gain in the index for food and beverages: Typically, inflation in this category is lowest during the fourth quarter. Indexes and percent changes for selected categories are presented in Table 2.

COMPARISON AREAS

The fourth quarter inflation rate in the Phoenix metropolitan area was identical to the national average. The Valley experienced greater increases in transportation and medical care but lesser gains in the apparel and upkeep and the other goods and services categories.

During the last year, the inflation rate in Phoenix was greater than in Denver and the United States as a whole, but slightly less than in San

Diego (see Table 3). Increases in transportation, medical care, and entertainment were larger in the Valley than in each of the comparison areas.

Medical care is the category in which the Phoenix inflation rate deviates the most from rates in other areas. The change in this category is not exactly comparable to that of other areas, however, because the Bureau of Labor Statistics, which conducts the CPI for all areas other than Phoenix, does not directly price health insurance. Although this methodological difference normally has little effect, the health insurance index for 1984 rose 49.5 percent in the Phoenix CPI but approximately 5 percent in the national CPI. If health insurance, a major component of the medical care category, is omitted from both the Phoenix CPI and the national CPI, the 1984 increase in medical care costs in Phoenix (3.4 percent) is less than the national increase (approximately 7 percent).

The Phoenix all items index, excluding health insurance, rose only 4.9 percent in 1984, compared to an unadjusted gain of 5.9 percent. However, the exclusion of health insurance had little impact on the 4.0 percent rise in the national CPI. Thus, the inflation rate in Phoenix during 1984 was higher than the national average, although approximately one-half of the difference is due to the health insurance component.

OUTLOOK

With inflation remaining stable at an annual rate between 5.5 and 6 percent in the Phoenix area and between 4 and 4.5 percent nationally, the inflation outlook has not changed in recent months. An acceleration in the inflation rate normally occurs at this stage of the economic cycle, but this increase is expected to be minimal during 1985.

In the Phoenix CPI, somewhat higher general inflation is likely to be offset by lower inflation in specific categories, particularly health insurance and used cars. Thus, Phoenix inflation during 1985 should be similar to the rate during 1984. However, it is prudent to note that at no time in the last 20 years has inflation not accelerated with economic expansion.

— Tom R. Rex
Research Manager

TABLE 1
PERCENT CHANGES
IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

Expenditure Category	Relative Importance	Percent Change from Preceding Quarter							
		1st 1983	2nd 1983	3rd 1983	4th 1983	1st 1984	2nd 1984	3rd 1984	4th 1984
ALL ITEMS	100.0	0.2	1.7	1.6	0.5	1.9	1.5	1.7	0.7
Food and Beverages	19.0	2.3	1.5	-0.1	0.4	1.8	0.7	1.0	0.2
Housing	38.9	-0.5	1.8	0.9	-0.2	0.8	2.0	2.3	-0.1
Apparel and Upkeep	4.8	0.6	1.3	1.0	1.7	2.5	-1.3	-0.1	0.4
Transportation	21.9	-1.9	2.5	3.3	0.5	1.6	2.3	1.2	2.2
Medical Care	6.6	3.0	1.0	4.7	2.0	11.4	1.1	3.0	2.7
Entertainment	4.6	1.7	-2.1	-0.2	2.9	1.1	2.3	2.6	0.3
Other Goods and Services	4.2	2.6	2.7	4.7	0.5	0.8	1.1	2.1	1.2

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
FOURTH QUARTER, 1984
(1977 = 100)

Expenditure Category	Last Qtr. Index	This Qtr. Index	Percent Change	Year-Ago Change
ALL ITEMS	183.1	184.4	0.7	5.9
Food and Beverages	165.7	166.0	0.2	3.8
Food	166.2	166.6	0.3	3.8
Food at Home	164.0	164.1	0.1	3.7
Cereal and Bakery Products	172.5	177.7	3.0	10.3
Meats, Poultry, Fish, and Eggs	158.4	156.0	-0.2	1.0
Dairy Products	154.1	156.2	1.4	2.2
Fruits and Vegetables	177.7	176.0	-1.0	5.8
Other Food at Home	153.9	152.2	-1.1	2.8
Food Away from Home	167.7	168.8	0.7	4.0
Housing	193.0	192.8	-0.1	4.9
Shelter	203.8	206.6	1.4	5.4
Renters' Costs**	109.1	112.1	2.7	9.3
Homeowners' Costs**	103.3	104.0	0.6	3.3
Fuel and Other Utilities	177.6	168.4	-5.2	5.7
Gas (piped) and Electricity	201.1	183.7	-8.6	4.1
Household Furnishings & Operations	147.7	147.2	-0.4	2.3
Apparel and Upkeep	139.8	140.4	0.4	1.4
Transportation	179.6	183.6	2.2	7.6
Private Transportation	175.8	179.7	2.2	7.2
New and Used Cars	190.5	192.7	1.2	12.6
Motor Fuels	167.7	192.6	2.6	-1.0
Public Transportation	241.5	247.6	2.5	10.8
Medical Care	233.7	240.1	2.7	19.1
Entertainment	171.7	172.2	0.3	6.5
Other Goods and Services	164.2	166.2	1.2	5.3

An ** indicates that the base period is second quarter, 1983.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
Fourth Quarter, 1984

Expenditure Category	Percent Change from Last Quarter		Percent Change from One Year Ago			
	Phoenix	United States	Phoenix	United States	Denver	San Diego
ALL ITEMS	0.7	0.7	5.9	4.0	2.8	6.3
Food and Beverages	0.2	-0.2	3.8	3.9	3.7	3.4
Housing	0.1	0.4	4.9	4.3	3.3	7.8
Apparel and Upkeep	0.4	2.5	1.4	2.2	2.0	7.4
Transportation	2.2	1.0	7.6	3.2	1.4	6.3
Medical Care	2.7	1.5	19.1	6.2	6.4	4.3
Entertainment	0.3	1.0	6.5	3.6	-2.5	3.6
Other Goods and Services	1.2	3.0	5.3	6.2	4.5	7.8

Source (Tables 1, 2 and 3): Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in co-sponsorship with Valley National Bank; other data in Table 3 is from the U.S. Department of Labor, Bureau of Labor Statistics.

GSP Grows 9.6 Percent During 3rd Quarter

The Arizona Gross State Product (GSP) grew at an inflation-adjusted, annualized rate of 9.6 percent during the third quarter, 1984, extending the rapid expansion of the Arizona economy to a seventh consecutive quarter. Growth in GSP since the end of the 1982 recession has been 25.4 percent, more than during any earlier seven-quarter period.

GROWTH, BY SECTOR

The third quarter GSP growth rate was nearly identical to the revised second quarter rate (see Table 1). The growth in several industries slowed during the third quarter, notably in the construction and government sectors, in which gross product contracted. However, expansion in the manufacturing sector resumed after a nearly flat second quarter; agriculture largely recovered from its sharp second quarter drop; and the mining sector posted its second consecutive strong gain. Still, the gross product of the mining industry remained far below its 1981 peak, and the price of copper continued to decline during the third quarter.

ADJUSTING THE GSP

Most sectors of the Arizona economy follow essentially the same economic cycle, one that roughly coincides with the national business cycle. The Arizona agriculture and mining industries, however, do not follow this economic cycle and are subject to extreme fluctuations in GSP growth from quarter to quarter. Even though mining and agriculture contribute relatively insignificant

shares of the Arizona GSP, these severe quarterly fluctuations (not uncommonly 100 percent or more) disguise the economic cycle that the greater part of the Arizona economy is experiencing.

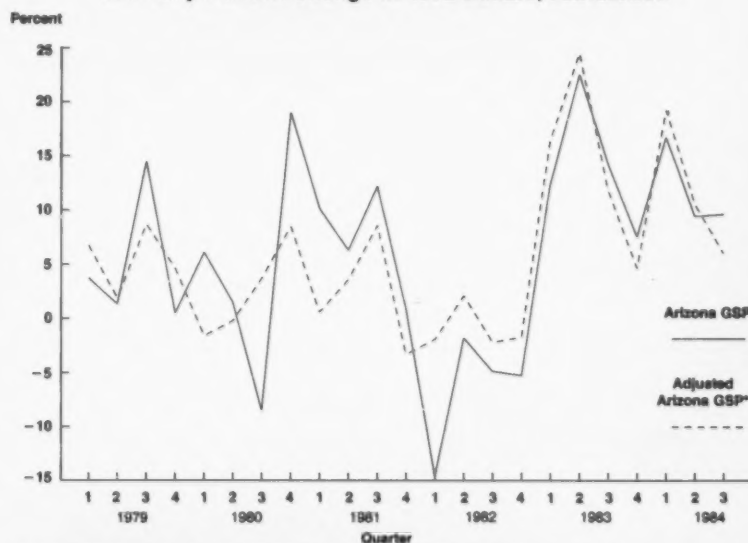
Therefore, an adjusted GSP has been calculated, which subtracts the gross product of the agriculture and mining sectors from total GSP. The result, illustrated in Figure 1, is a smoother cycle that coincides more closely with the cycle of the Gross National Product.

During recent years, major dif-

ferences have occurred in the two measures of GSP. The unadjusted GSP indicates that the short 1980 recession happened during the third quarter in Arizona, while it took place during the first two quarters nationally. The difference is primarily due to dramatic growth in the Arizona mining industry during the first two quarters of 1980, including 134 percent annualized growth in the first quarter; in the third quarter, however, mining's gross product declined 160 percent due to a strike. The exclu-

continued on page 12

FIGURE 1
ARIZONA GROSS STATE PRODUCT
Quarterly Percent Change in 1972 Dollars, Annualized



* Adjusted GSP is total GSP minus the gross products of mining and agriculture sectors

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in co-sponsorship with the ASU College of Business Dean's Council of 100.

TABLE 1
ECONOMIC GROWTH

Quarter	Arizona Gross State Product				Gross National Product
	Billions of Current Dollars, Annualized	Billions of 1972 Dollars, Annualized	Annualized Percent Change (1972 Dollars)	Annualized Percent Change (Adjusted GSP)*	Annualized Percent Change (1972 Dollars)
First, 1983	\$33.730	\$16.801	12.4%	16.5%	3.3%
Second, 1983	35.705	17.535	22.5	24.5	9.4
Third, 1983	37.270	18.156	14.2	11.8	6.8
Fourth, 1983	38.145	18.496	7.5	4.6	5.9
First, 1984	39.752	19.260 [†]	16.7 [†]	19.2	10.1
Second, 1984	40.833	19.719 [†]	9.4 [†]	10.5	7.1
Third, 1984	41.738	20.193	9.6	6.1	1.6

* The adjusted GSP is the annualized GSP in billions of 1972 dollars, minus the contributions of the agriculture and mining industries. Revised.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in co-sponsorship with the ASU College of Business Dean's Council of 100.

Purchasing Survey Indicators Turn Positive in January

The final few months of 1984 may have been the pause that refreshed the economy. While the growth rate in January continued sluggish, the slowing trend evident during the fourth quarter of 1984 appears to have halted, and signs of an acceleration in the growth rate now are appearing. All indicators of economic performance again were positive, for the first month since last October. Production, employment and new orders received from customers all registered an encouraging upward movement.

The foundation for a resumption of economic growth appears to be in place. Interest rates have fallen, energy costs likely will decline even further during the early part of 1985 with the evident disarray in OPEC, and no inventory overhang threatens a resumption of growth. The Arizona economy is starting the new year at the highest level ever and seems poised to resume a moderate, but increasing, expansion during the first half of 1985.

Table 1 presents the results of the November, December and January surveys of Arizona purchasing managers. Analysis of these results follows.

NOVEMBER

Prices paid for major purchased items went up in November at a rate only slightly greater than in October. Both the October and November increase rates were smaller than in any month since March 1983,

showing that inflation continues under control and poses no immediate threat to economic stability.

Delivery time on shipments from vendors stretched again, but the increase was the smallest since February 1983 (25 months ago). The reduction of vendor backlogs over the last half of the year is a result of the general economic slowdown.

Inventory levels of purchased materials saw a net decrease for the first time since January 1983 (26 months ago), when the current economic expansion began. As new order entry rates have come down over the past several months, Arizona firms have been watching inventory closely and no longer are adding to their inventory investment. If this disinvestment continues over the next few months, as now appears likely, it will have a negative influence on further economic growth. However, the close control being exercised over inventories should help to avert any major economic tailspin.

New orders received from customers went up again in November, but at the smallest rate since the recovery began in January 1983.

Production also increased at the lowest monthly rate since January 1983. This slower rate of production growth is a reaction to the slowdown in order receipts and likely will continue over the next few months, possibly even turning negative.

Employment turned negative for the first time since the recovery began in January 1983. This shows that we have entered a "no-growth" situation. Further cuts in employment levels likely will occur over the next few months.

Purchases by Arizona firms went up again in November, but the increase was the smallest since this data series was initiated in March 1983. The plateau in new order receipts and slowing of production growth has eliminated the need to increase flow rates for incoming material.

DECEMBER

Prices paid for major purchased items in December experienced the smallest hike since February 1983. The overall price increase in the

fourth quarter was very low, showing that inflationary pressures remain well under control.

Delivery time on shipments from vendors lengthened, but the December stretch-out was small, as has been the case each month of the fourth quarter. The general slowing of the rate of economic growth has taken considerable pressure off vendor delivery backlogs.

Inventory levels of purchased materials advanced slightly, following November's minor drop. Purchased material inventory levels of Arizona firms have shown almost no change over the past six months, as the slowdown in the growth rate has eliminated the need for stock building and has caused company management to tighten inventory control systems.

New orders received from customers went up in December at a greater rate than in November. However, the past two months have seen the smallest order growth since January 1983, the month when the current recovery and expansion began. This provides definite evidence that a pronounced pause in growth has taken place.

Production of Arizona firms increased in December at approximately the same relatively small rate as in November. November and December experienced the lowest net increases since January 1983. This was a needed adjustment to the lower incoming order rates.

Employment was flat in December, marking the second consecutive month of zero payroll growth. The employment increase rate began to tail off last August, in reaction to the slowing growth rate. However, it is significant that employment is holding (not decreasing) at a very high aggregate level.

Purchases by Arizona firms increased at a somewhat greater rate than in November, although that rate was still small by historical standards.

Capital expenditure plans: A special question is asked on each December survey, concerning *anticipated* expenditures for new plant and equipment during 1985. The responses indicate that it will be a very good year—on a par with the past year, which was very expansionary,

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity—higher, unchanged, or lower—of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
PURCHASING SURVEYS

Percent of Purchasing Managers Indicating Each Response
(Compared to Prior Month)

Key Indicators	November 1984			December 1984			January 1985		
	Higher	Same	Lower	Higher	Same	Lower	Higher	Same	Lower
Prices paid for major commodities	23	67	10	18	72	10	31	59	10
Delivery time from vendors	24	63	13	31	54	15	20	67	13
Purchased materials inventory level	26	46	28	31	42	27	29	45	26
New orders received	34	35	31	37	33	30	38	36	26
Production	36	42	23	34	43	23	40	41	19
Employment	18	63	19	19	62	19	19	66	13
Purchases	35	38	27	41	31	28	42	35	23

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

and equal to the boom years of the late 1970s. The results from this special question over the past 10 years are shown in Table 2.

Thus, Arizona's economy has finished the year on a growth plateau. The very strong growth performance exhibited during most of 1983 and the first half of 1984 could not have been maintained indefinitely. The pause in the expansion has occurred at a very high level. The specter of a burgeoning federal deficit, coupled with a massive unfavorable merchandise trade deficit, does not augur well for an immediate, strong acceleration of growth. However, the substantial reductions in interest rates of the past two months likely will postpone any dangerous economic tailspin. The results of the next few months will determine which direction this end-of-the-year turning point will take.

JANUARY

Prices paid for major purchased items increased in January at the highest rate since last August, although the Arizona economy has en-

joyed relatively stable price levels over the last part of 1984. While the January results show that inflation is moving up somewhat, the strength of the dollar in foreign trading, coupled with the downward trend in petroleum prices, likely will prevent any major resumption of an inflationary spiral during the first half of 1985.

Delivery time on January shipments from vendors lengthened at the smallest rate in close to two years (since February 1983). The steady slowing on order deliveries is indicative of the general slowdown in the rate of economic expansion, as production rates catch up to demand of Arizona firms for raw materials and supplies.

Inventory levels of purchased materials remained almost unchanged in January, marking the seventh month of essentially no growth. The shutdown in inventory building, caused by the lower expansion rate and improved inventory control systems, has removed a major factor propelling the expansion. However, it is significant that no inventory overhang exists to move the economy in-

to an inventory-induced downswing.

New orders received by Arizona firms from their customers went up in January, reversing a downtrend in the new order rate that was evident during the last half of 1984. While the increase was well under that recorded in each of the first nine months of 1984, it shows that the Arizona economy is now in a position to begin a more pronounced expansionary trend, after a growth pause during the last quarter of the old year.

Production enjoyed the largest increase in the past six months (since July), reversing several months of slow growth. While this is an encouraging sign, a continuation of such production increases is dependent on further growth in new order receipts.

Employment went up in January, following two flat months. While the net increase was small, the ability of the economy to reverse the slowing growth trend and the need to expand the work force again is a positive sign.

Purchases of materials and supplies by Arizona firms increased at the highest monthly rate since October. If the new order and production rates continue to expand over the next few months, even greater purchase commitments will be needed, which will move the economy to new, higher levels early in 1985.

— Harold Fearon

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

TABLE 2
ANTICIPATED EXPENDITURES FOR NEW PLANT AND EQUIPMENT

	Percent		
	Higher	Same	Lower
1985 compared to 1984	53	28	19
1984 compared to 1983	53	31	16
1983 compared to 1982	27	26	47
1982 compared to 1981	40	19	41
1981 compared to 1980	49	27	24
1980 compared to 1979	54	29	17
1979 compared to 1978	55	28	17
1978 compared to 1977	54	30	16
1977 compared to 1976	48	37	15
1976 compared to 1975	41	28	31

Source: Purchasing Management Association of Arizona and Purchasing Management Association of Southern Arizona.

Phoenix Area Homes Appreciate 3 Percent in '84

Appreciation in home values during 1984 in the Phoenix metropolitan area remained stable at an annual rate of slightly more than 3 percent. An update and expansion of the original article on housing appreciation (see the third quarter, 1984, *Arizona Business*) follows.

HOUSING APPRECIATION, 1981-84

The median rate of housing appreciation in the Phoenix area has been nearly constant since late 1982, at 0.8 percent per quarter (see Figure I). This rate is lower than in previous years: As the nation remained mired in the 1981-82 recession, the rate of appreciation followed the inflation rate down to relatively low levels. Despite booming economic conditions during 1983 and 1984, the rate of appreciation has not accelerated; the slowest quarterly rate, 0.7 percent, was recorded for the fourth quarter, 1984.

Home values are again increasing at approximately the rate of inflation, as seen in Table 1, following several years during the 1970s when gains exceeded the inflation rate. The appreciation rate was lower than the inflation rate during 1984, partially because it typically lags changes in the inflation rate and partially because of persistent housing affordability problems. Continued high mortgage interest rates limit market

demand and prevent sellers from raising the price of their home.

The appreciation rate during the last two years was less than the rate of increase in the median sales price, with the difference almost entirely due to an increase in size of the average home sold: The gain in the median sales price per square foot of resale homes was almost identical to the appreciation rate of resale homes (see Table 1).

Effect of Housing Characteristics on Appreciation

Not all homes appreciate at the same rate. A home's value is partially controlled by the owner, through maintenance, repair and improvement activities. Certain determinants of appreciation, however, are a function of the entire market, not controllable by the homeowner, such as whether the home is new and expensive.

The most important single influence on appreciation is whether the home was purchased new. (In this study, a "new" home is defined as one built, and later resold, between 1981 and 1984). As seen in Table 1, the appreciation rate of new homes, 10.7 percent during 1983-84, was nearly twice that of homes that were not purchased new, 5.7 percent. This rapid appreciation is realized only upon the first sale of a new home.

The faster increase in value of new homes may be misleading, however, in that at least a portion of the gain reflects additional expenses that most buyers of new homes incur in making permanent improvements, such as landscaping, which add to the value of the property. Thus, when a new home buyer later sells the property, not as much profit is realized as the appreciation rate suggests.

The other characteristic that has a statistically significant impact on appreciation is the price of the residence: The more expensive a home, whether a new or existing property, the higher its rate of appreciation (see Figure II). Homes that sold for more than \$100,000 had an appreciation rate of 1.2 percent per quarter, compared to a rate of only 0.5 percent per quarter for homes marketed for less than \$60,000.

Housing Appreciation by Geographic Area

While the rate of appreciation varies by location across the Phoenix metropolitan area, much of the variation can be explained by the housing characteristics described above. An area with a large proportion of new and expensive homes will usually have a higher rate of housing appreciation than an area of older and less expensive dwellings.

The rate of appreciation by district is shown in Table 2. Those districts with an appreciation rate that is statistically significant in its divergence from the metropolitan Phoenix average are indicated by an 'H' (higher) or 'L' (lower).¹ Rapid appreciation in the North Scottsdale, Paradise Valley, South Mesa, East Mesa, and Sun City West districts primarily relates to the greater proportion of new homes in these areas. In addition, most residences in North Scottsdale,

TABLE 1
INFLATION MEASURES

	Percent Change		
	1983	1984	1983-84 Total*
Metropolitan Phoenix Consumer Price Index	1.6	5.9	7.4
U.S. Consumer Price Index	3.2	4.3	7.6
Phoenix Area			
All single family homes:			
Appreciation rate	3.6	3.2	6.9
Median sales price	4.8	6.3	11.5
New single family homes:			
Appreciation rate	5.7	4.7	10.7
Median sales price	6.0	9.9	16.4
Existing single family homes:			
Appreciation rate	2.9	2.7	5.7
Median sales price	4.6	4.8	9.6
Median sales price per square foot	2.9	3.0	6.0

*Calculated at a compounded rate.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University. U.S. Consumer Price Index from the U.S. Department of Labor, Bureau of Labor Statistics.

¹The mean (average) quarterly appreciation rate in the Phoenix area during 1981-84, 0.9 percent, was slightly higher than the median rate, 0.8 percent, because of a relatively small number of properties that had a very high rate of appreciation. The median rate, therefore, is considered more representative of the total single family home market. The evaluation of statistical significance was performed upon the mean, since a median cannot be used for such mathematical processes.

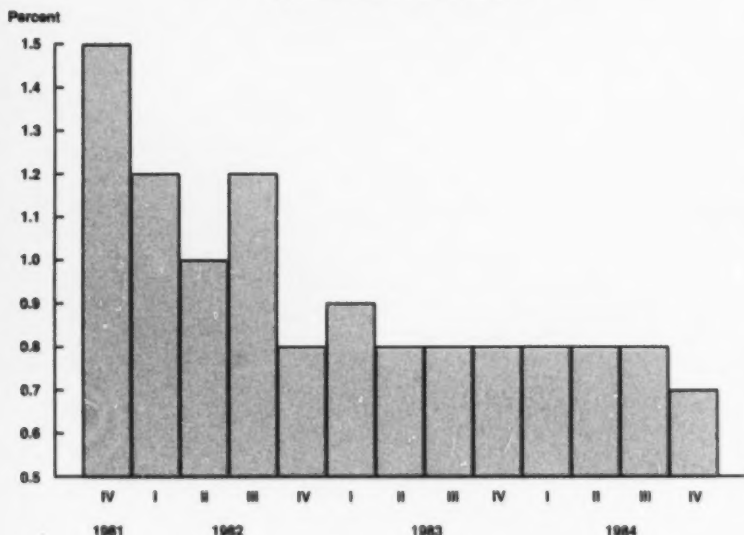
Paradise Valley, and Sun City West are relatively expensive.

The other district with significantly higher appreciation, Sun City/Youngtown/Peoria, does not have a high

proportion of new or expensive homes. Apparently, the unique nature of Sun City, including the unwillingness of homebuyers to consider other areas, such as Glendale or

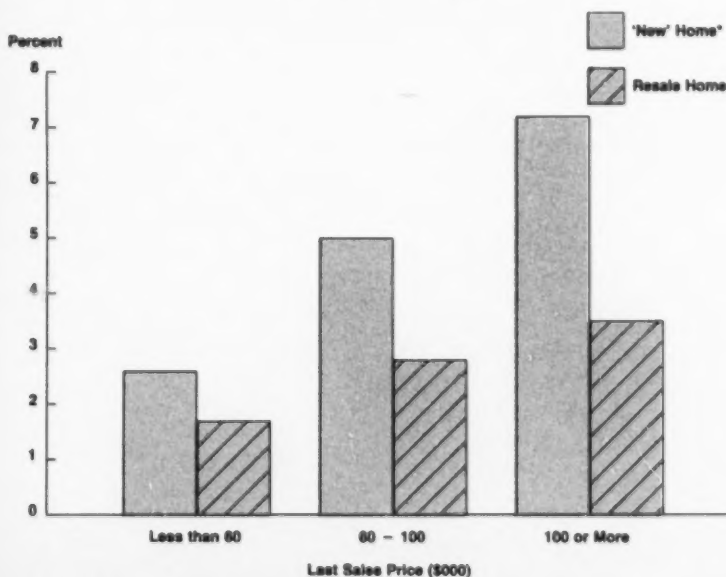
Phoenix, is responsible for the greater increase in home values. This same condition probably explains the very high rate of appreciation in Sun City West. East Mesa, which includes Leisure World and other retirement communities, also follows this pattern, since the appreciation rate in this district is slightly higher than expected, given its relatively low-priced homes.

FIGURE I
MEDIAN RATE OF APPRECIATION PER QUARTER
By Quarter Of Last Sale



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE II
APPRECIATION IN HOME VALUES
1981-84, Annual Rate



*A 'new' home is one originally sold as new between 1981 and 1984 and later resold during this period.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

The pattern of housing appreciation in North Scottsdale is unusual. The median rate was not particularly high at 0.9 percent and was less than expected given the preponderance of new, expensive homes in this area. However, the mean rate of appreciation, 1.2 percent, was significantly higher than the metropolitan average, 0.9 percent. North Scottsdale had a large number of homes gaining value rapidly but another large segment that was not appreciating at all. Surprisingly, the expensive homes (those priced more than \$100,000) were not appreciating, while the intermediately priced residences (those priced between \$60,000 and \$100,000) gained value. Since price is a function of supply and demand, apparently an excessive supply of expensive homes in North Scottsdale is responsible for their slow rate of appreciation.

The slowest appreciation rates in the Phoenix area were in the Metrocenter, Maryvale, and South Tempe districts. Metrocenter and Maryvale are areas in which most homes are lower-priced and older. South Tempe's low home appreciation rate occurred in all price ranges and for both new and resale properties.

The appreciation rate in some districts was different in 1984 than in 1981-83. Except for Sun City West, each district that enjoyed a higher appreciation rate in 1984 was in Phoenix, generally in an area of older dwellings in the central part of the city. None of the districts with a lower appreciation rate during 1984 were in Phoenix: North Tempe, North Mesa, and the western suburbs suffered the largest decline. Because of the short time frame and the associated relatively small number of transactions, these changes in appreciation during 1984 should be interpreted with caution.

TABLE 2
MEDIAN RATE OF HOME APPRECIATION PER QUARTER
By Geographic District

District	Median Percent Change Per Quarter 1981-83	1984 Only	1981-84
North Scottsdale	0.9	0.9	0.9 ^H
South Scottsdale	0.7	0.7	0.7
Paradise Valley	1.3	1.0	1.2 ^H
North Sunnyslope/Moon Valley	0.7	0.7	0.7
Northwest Phoenix	0.9	0.8	0.8
Metrocenter	0.4	0.6	0.5 ^L
Sun City/Youngtown/Pecora	1.2	1.3	1.2 ^H
Glendale	0.8	0.7	0.7
Christown	0.5	0.5	0.5
North Central Phoenix	0.6	1.0	0.8
East Camelback	0.6	1.0	0.9
East Central Phoenix	0.6	1.1	0.9
Mid-town Phoenix	0.5	0.8	0.6
West Central Phoenix	0.7	0.7	0.7
Maryvale	0.5	0.5	0.5 ^L
Downtown/South Central Phoenix	0.0	1.0	0.6
South Phoenix	0.8	1.1	1.0
North Tempe	0.7	0.2	0.5
South Tempe	0.7	0.5	0.6 ^L
North Mesa	1.0	0.5	0.8
South Mesa	0.9	1.0	1.0 ^H
East Mesa	1.2	0.9	1.0 ^H
Chandler/Gilbert	0.9	0.9	0.9
Western Suburbs	1.2	0.6	0.9
Deer Valley	1.0	0.7	0.8
Sun City West/Rural Maricopa Co.	1.6	2.2	2.1 ^H
TOTAL, METROPOLITAN PHOENIX	0.8	0.8	0.8

^HThe mean associated with this median is significantly higher than the mean for all of metropolitan Phoenix.

^LThe mean associated with this median is significantly lower than the mean for all of metropolitan Phoenix.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University. District designations are copyrighted by the Maricopa County Housing Study Committee.

OUTLOOK

Appreciation in Phoenix area home values is expected to remain at slightly more than a 3 percent annual rate through 1985. Inflation and housing affordability, the two factors that most influence the overall appreciation rate, are not likely to change much through 1985. Because the inflation rate is relatively low, and the price of other homes is not rising rapidly, a seller does not need to make a large profit on the sale of a home. Further, the affordability problem, currently caused primarily by high mortgage rates, prevents the seller from increasing the price greatly.

Looking beyond 1985, appreciation rates are likely to follow changes in the inflation rate. Because it is difficult to present a situation in which mortgage rates would decline sub-

stantially, a persistent affordability problem is likely to continue to limit housing appreciation. Should mortgage rates fall, any increase in home values that significantly exceeds the gain in household income will again cause an affordability problem, this time due to higher home prices rather than to high interest rates. Thus, it is difficult to conceive a situation similar to that of the late 1970s, when housing values accelerated rapidly, beyond rises in inflation or income levels.

— **Tom R. Rex**
Research Manager

— **Jay Q. Butler**

Dr. Butler is Associate Professor of Real Estate in the College of Business, Arizona State University. He also serves as Director of the Arizona Real Estate Institute.

Valley Home Sales Rise in '84

The number of homes sold in the Phoenix metropolitan area during the fourth quarter declined slightly from the third quarter level of 13,850 to approximately 13,500 (see Table 1 on page 11). While sales of existing homes fell for the second consecutive quarter, new home sales rose during the fourth quarter.

For the entire year, home sales numbered 55,658, nearly 10 percent more than in 1983. Within the single family home market, the increase was led by sales of resale properties, but within the townhouse/condominium market, sales of new properties gained the most.

Sales of existing single family homes accounted for two-thirds of all home sales during 1984; together with sales of existing townhouses and condominiums, the resale market made up more than three-fourths of all sales. Sales of new townhomes and condominiums increased most rapidly during 1984 but still constituted only 6 percent of all sales.

MEDIAN SALES PRICE

The median sales price fell in the fourth quarter as both new and resale single family home prices declined. The median sales price of townhouses and condominiums increased, however.

The median sales price of all homes sold during 1984 was 6.0 percent higher than in 1983. Part of this increase was due to a shift toward the purchase of larger homes: The median price per square foot did not rise by as much as the median sales price in 1984. The price increase for new homes was nearly twice the gain for existing homes. While the median price of new townhouses and condominiums rose 21 percent during 1984, it still did not reach its 1981 peak.

OUTLOOK

With little change anticipated in inflation rates, interest rates, or general economic conditions, Phoenix area home sales are expected to be much the same in 1985 as in 1984. Prices probably will continue to rise at a moderate rate, with an annual sales volume near that of 1984.

— **Tom R. Rex**,
Research Manager

TABLE 1
METROPOLITAN PHOENIX HOME SALES

Fourth Quarter, 1984	Single Family			Townhouse/Condominium			Grand Total
	Resale	New	Total	Resale	New	Total	
Median sales price	\$72,225	\$78,700	\$74,750	\$83,900	\$84,825	\$84,450	\$72,025
Percent change from:							
Third quarter, 1984	-1.1	-0.7	-0.3	1.4	2.8	2.3	-1.0
Fourth quarter, 1983	3.8	5.7	5.3	2.2	13.3	7.4	3.8
Number of sales	8,802	2,548	11,350	1,217	914	2,131	13,481
Percent change from:							
Third quarter, 1984	-6.1	6.3	-3.5	-1.2	6.2	1.8	-2.7
Fourth quarter, 1983	8.0	-5.1	4.8	11.5	36.8	21.1	7.0
Annual, 1984							
Median sales price	\$71,250	\$76,950	\$73,000	\$83,500	\$82,600	\$83,100	\$71,025
Percent change from 1983	4.8	9.9	6.3	3.3	21.2	8.8	6.0
Number of sales	37,183	10,037	47,220	5,173	3,265	8,438	55,658
Percent change from 1983	10.5	5.0	9.3	2.3	28.5	11.0	9.8

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Nearly 19,000 Arizona Service Businesses Make \$5.6 Billion in '82

At the end of 1982, the services industry in Arizona comprised 17,262 establishments that were subject to federal income tax and an additional 1,591 establishments exempt from this tax, according to the Census of Service Industries conducted by the U.S. Bureau of the Census.

The portion of the industry subject to federal tax reported receipts of \$5.1 billion in 1982, an average of \$294,000 per establishment, compared to a revenue of \$0.5 billion for tax-exempt organizations, an average of \$338,000 per establishment.

TYPES OF SERVICE BUSINESS

The services industry consists of several types of business, including health services, except hospitals; business services; hotels, motels, and other lodging places; personal services; amusement and recreation services; legal services; and selected educational services. Other businesses that fall into this category are engineering, architectural, and surveying services; accounting, auditing, and bookkeeping services; social and other services; automotive repair, services, and garages; and miscellaneous repair services.

Organizations exempt from the federal income tax include civic, social, and fraternal organizations; individual and family social services; and various other non-profit operations, such as museums, nursing care facilities, and legal aid societies.

EMPLOYMENT

Taxable organizations employed 147,768 workers in March 1982, an average of nine employees per establishment, compared to employment of 21,551 workers in tax-exempt organizations, an average of 14 employees per establishment. The average pay per worker was higher in taxable organizations (\$12,700) than in tax-exempt organizations (\$9,600).

RECEIPTS AND PAY, BY SECTOR

Of the establishments subject to federal income tax, those engaged in health services constituted 27 percent of the total and produced 26 percent of the receipts. The next largest sector was business services, with 18 percent of the establishments and 22 percent of the receipts.

Although the lodging industry made up only 4 percent of the establishments, it produced 11 percent of the receipts and employed 15 percent of the workers. This sector generated the greatest receipts per establishment, \$764,000, but the average pay of its workers (which includes part-time employees) was the least, \$6,800.

The smallest service establishments were those dealing with personal services, producing receipts of only \$137,000 per establishment.

The highest paid service workers were those in the legal services sector, with an average pay of \$25,000 in 1982. Health services employees earned an average of \$20,200.

GEOGRAPHIC DISTRIBUTION AND RECEIPTS

Nearly two-thirds of the state's service establishments were located in Maricopa County, with an additional 20 percent found in Pima County.

Services industry establishments in the Phoenix metropolitan area that were subject to the federal income tax had 1982 receipts of \$3.6 billion, 71 percent of Arizona's total, and numbered 11,011, which was 64 percent of the state's total. The city of Phoenix had 6,589 service establishments, many more than Scottsdale (1,138), Mesa (987), Tempe (804), and Glendale (476). Scottsdale and Tempe had an unusually large number of business services establishments, while Mesa had a large number of health services establishments.

Phoenix service establishments ranked first in value of receipts, at \$2.5 billion, 68 percent of the county's total. Establishments in Scottsdale were a distant second, with receipts of \$0.4 billion. On a per capita basis, however, establishments in Goodyear and Scottsdale had the greatest value of receipts, followed by those in Phoenix.

Outside Maricopa County, communities with a large number of service establishments included Tucson (2,842), Yuma (351), and Flagstaff (332). The value of receipts in Tucson was \$0.8 billion.

— Tom R. Rex
Research Manager

continued from page 5

sion of mining and agriculture reveals that the rest of the Arizona economy contracted during the first two quarters of 1980, followed by a recovery in the third quarter.

For the 1981-82 recession, the adjusted GSP attests to most of the Arizona economy experiencing a longer, but milder, recession than indicated by the unadjusted GSP. The difference was due to continued rapid expansion through all of 1981 in both the mining and agriculture industries, followed by a severe contraction in 1982 in both industries.

GSP/GNP COMPARISON

More recently, the adjusted GSP suggests that most of the Arizona economy is closely following the national economic cycle on a quarter-by-quarter basis. After a peak growth rate in the first quarter of 1984, both economies slowed during the second and third quarters. However, while the slowdown in the national economy dropped the rate of growth to less than its long-term trend of 3 percent, the greater part of the Arizona economy continued to grow faster (6.1 percent) than its long-term trend of 5.5 percent.

Growth in the national economy accelerated during the fourth quarter to an estimated 3.9 percent. The adjusted GSP probably also grew at an accelerated rate, perhaps 7 or 8 percent. Because of the unpredictability of growth in the gross products of agriculture and mining, growth in total GSP is difficult to estimate. However, there is no doubt that the 1984 average will greatly exceed the 1978 record of 10.7 percent.

— Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month	Value	Percent Change from Previous Month	Percent Change from Year Ago	Value	Year-To-Date Percent Change from Year Ago
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Nov.	272,672	-11	23	3,553,340	63
Pima County	Nov.	55,643	-21	28	709,512	21
Balance of State	Nov.	95,493	96	154	631,997	33
Arizona	Nov.	423,808	-1	40	4,894,849	51
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Nov.	3,048	-41	-13	58,686	34
Pima County	Nov.	702	-47	-36	14,464	2
Balance of State	Nov.	1,032	5	17	12,400	6
Arizona	Nov.	4,782	-36	-13	83,550	23
HOME SALES						
Maricopa County - Number	Dec.	4,854	32.3	21.3	55,658	9.9
Maricopa County - Median Price	Dec.	72,700	1.7	4.0	71,025	6.0
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Nov.	2,353.8	9.7	3.8	30,620.1	8.4
Arizona	Dec.	2,687.8	14.2	9.7	33,307.7	8.5

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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Arizona Index of Leading Economic Indicators

New Index to Signal State's Economic Turning Points

To provide an early warning of changes in the performance of the Arizona economy, the Bureau of Business and Economic Research has developed the Arizona Index of Leading Economic Indicators (hereafter referred to simply as "index"). The methodology used to construct this index is similar to that used to construct the national Index of Leading Economic Indicators, reported monthly by the U.S. Department of Commerce.

Both indexes predict economic turning points, i.e., when an expansion will turn into an economic contraction (recession) and when the

recovery will follow a recession. The indexes warn of a recession several months before its onset; the lead time in predicting a recovery is somewhat shorter.

While the Arizona economy, like the national economy, follows a cycle in which contractions in business activity occur, on average, every four or five years, both the timing and magnitude of expansions and contractions are somewhat different in Arizona. An index specific to the state is needed to allow residents,

businesses and governments to plan effectively for these changes.

COMPONENTS OF THE INDEXES

An economic indicator can be classified into one of three groups—leading, lagging, or coincident—depending on when changes in that indicator occur in relationship to changes in economic activity, as measured by the Gross National Product (GNP) or Arizona Gross State Product (GSP). Twelve eco-

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- 11 '84 Homebuyer Breakdown
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- 14 '84 New Housing Starts
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Inconsistent Economic Growth Likely Through '85

The economic expansion, both nationally and in Arizona, has gained new vigor, following slower growth during the third quarter, 1984. However, growth since the third quarter remains slower than that of 1983 and early 1984. The inconsistency of recent economic growth is likely to continue throughout 1985.

Oscillating economic activity is common during the mature stages of an economic expansion. After several successive quarters of rapid growth, such as those experienced during 1983 and the first half of 1984, the economy almost invariably

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nomic indicators meet the criteria, such as timing, consistency, and economic significance, for inclusion in the national Index of Leading Economic Indicators. Ten indicators pass the test for inclusion in the Arizona index, including two national indicators and several local counterparts.

Economic indicators can also be classified by economic process. The Arizona index includes a representative of each of the seven economic processes defined by the U.S. Department of Commerce, shown in Table 1. Each component of the Arizona index has been available monthly since 1970 and has consistently led changes in Arizona economic performance during the last 15 years.

Components of the state's index are seasonally adjusted and moving averaged to eliminate extreme values. Five components derived from Dr. Harold Fearon's survey of the purchasing management associations of Arizona and southern Arizona

have been combined into one composite component, equal in importance to each of the other five components in computing the Arizona index.

Two components of the national index have been directly incorporated into the Arizona index: money supply (M2) and the change in sensitive materials prices. Unlike the other 10 national components, these two indicators can exist only at the national level: There is no Arizona money supply; and the wholesale prices of materials are no different in Arizona than elsewhere in the country. Further, each of these components represents important economic processes.

HISTORY AND INTERPRETATION OF THE INDEXES

The Arizona Index of Leading Economic Indicators is compared to turning points in the Arizona economy in Figure 1. The highest and lowest indexes of each cycle occur prior to the beginning or end of each recession, respectively.

The trend in the Arizona index is unimportant, caused only by the increase in real money supply. It should not be compared to the trend in the national index. (The Arizona Gross State Product should be used to measure growth of the Arizona economy.)

To accurately interpret both the national and Arizona indexes, a decision rule must be applied. While three consecutive monthly declines in the national index are frequently assumed to indicate a downturn in the national economy, application of this simple rule would have resulted in some false signals, e.g., predicting a recession when one did not develop in late 1955 and early 1962. In contrast, the following rule has nearly always been accurate, both in Arizona and nationally, in predicting a recession¹:

- The index must decline for at least three successive months, with a total decrease of at least 1.5 percent.
- A subsequent month or two of

TABLE 1
COMPONENTS OF THE ARIZONA AND NATIONAL INDEXES OF LEADING ECONOMIC INDICATORS
By Economic Process²

Economic Process	Arizona	National ⁴
Employment and Unemployment	Average workweek, Arizona manufacturing industry ¹ Arizona unemployment insurance claims ¹ Employment ²	Average workweek, manufacturing industry Average weekly initial unemployment claims
Production and Income	Production ²	
Consumption, Trade, Orders, and Deliveries	New orders ² Delivery time from vendors ²	New orders, consumer goods and materials Vendor performance
Fixed Capital Investment	Residential building permits, Maricopa County ²	New building permits, private housing Net business formation Contracts and orders for plant and equipment
Inventories and Inventory Investment ..	Purchased materials inventory level ²	Change in inventories on hand and on order
Prices, Costs, and Profits	Change in sensitive materials prices: same as national	Change in sensitive materials prices
Money and Credit	Money supply (M2): same as national	Stock prices, 500 common stocks Money supply (M2) Change in credit outstanding

Sources:

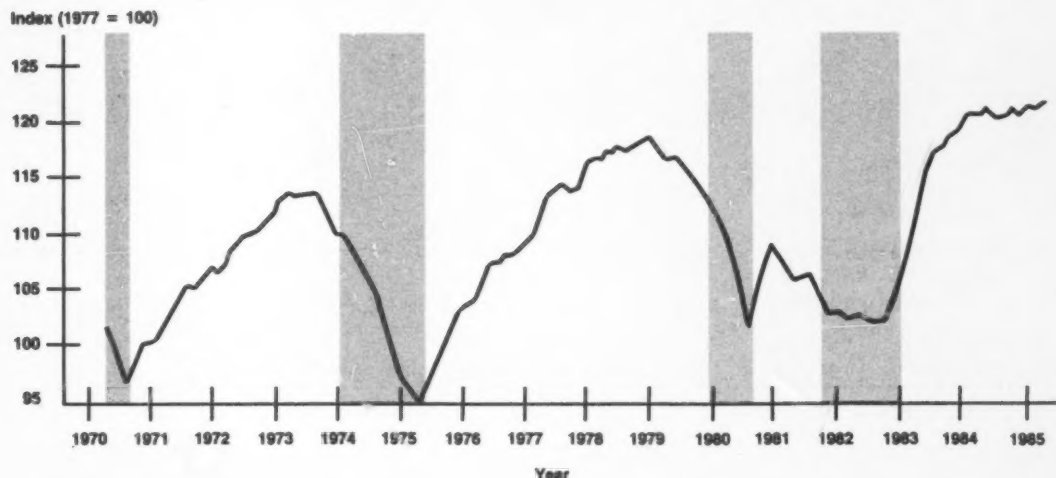
¹Arizona Department of Economic Security.

²Monthly business survey of the purchasing management associations of Arizona and southern Arizona.

³Bureau of Business and Economic Research, College of Business, Arizona State University.

⁴U.S. Department of Commerce, Bureau of Economic Analysis.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Shaded areas indicate Arizona recessionary periods.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

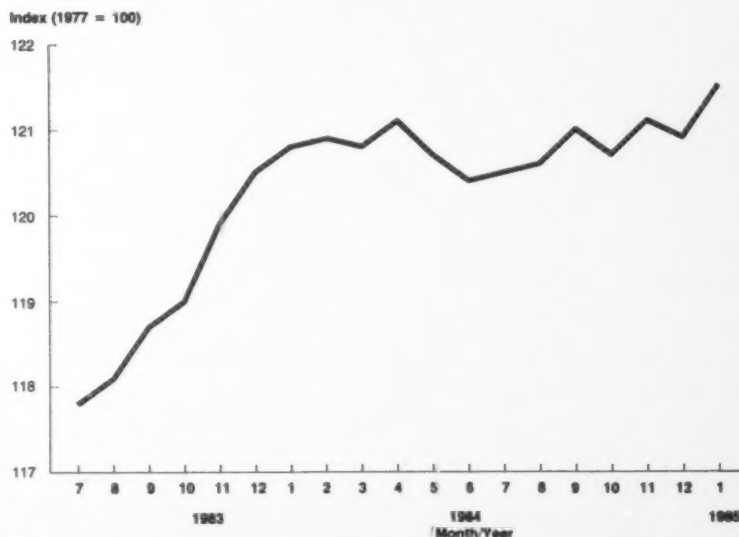
gains in the index does not affect the forecast unless the increase(s) places the value of the index within 1.5 percent of the value it had immediately preceding the series of declines.

- The peak value of the index is not necessarily important: It is not unusual to have a period of mixed monthly increases and decreases in the index after its peak but prior to its true decline.

Application of this decision rule to the national index provides an average of four months lead time from recognition to commencement of a recession. For example, in August 1979, the national index had fallen for three consecutive months by more than 1.5 percent, allowing prediction of the recession that began in January 1980. Application of this decision rule to the Arizona index provided a median lead time of five months in predicting the three recessions since 1970; the median lead time was only two months for these three national recessions.

The decision rule for predicting the recovery from a recession is not as strict as that for predicting a slump: Either three consecutive monthly increases in the index or two increases that total at least 1.5 percent will reliably indicate an upturn. This rule has never given a false signal either nationally or in Arizona. However, the lead time from recognition to com-

FIGURE II
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

mencement of a recovery is quite short, on the average just 1.5 months nationally. In Arizona, recognition is coincident with the recovery's start.

INTERPRETING THE CURRENT INDEXES

The Arizona index has essentially been flat since January 1984 (see Figure II). During 1984, the index

fluctuated up and down, with no change exceeding 0.3 percent. The unusual length of this pattern foresaw the inconsistent economic growth of the second half of 1984 and indicates that such fluctuations are likely to continue during 1985.

The January 1985 index value was 121.5, a 0.5 percent increase from December. Although this was larger than any monthly gain of the prior 12

TABLE 2
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS
TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS
(1977 = 100)

	Index Value				Net Contribution		
	Oct.	Nov.	Dec.	Jan.	Nov.	Dec.	Jan.
Delivery Time*	97.4	96.2	95.9	95.4	-.04	-.01	-.02
Inventory Levels*	96.4	96.5	96.5	97.5	.00	.00	-.04
New Orders*	99.9	99.1	99.9	99.2	-.03	.03	-.03
Production*	99.0	99.5	100.6	101.1	.02	.04	.02
Employment*	98.7	98.0	97.7	97.5	-.03	-.01	-.01
Residential Building Permits	102.6	102.8	102.5	103.5	.04	-.05	.20
Unemployment Insurance Claims	101.0	101.0	99.3	98.1	.00	-.29	-.24
Average Workweek Manufacturing	106.2	105.9	102.6	101.6	-.05	-.56	-.16
Money Supply	219.8	222.2	225.4	230.2	.40	.53	.96
Change in Sensitive Materials Prices	95.6	96.3	97.1	NA	.12	.13	NA
OVERALL INDEX	120.7	121.1	120.9	121.5	.43	-.19	.64

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

NA = Not available.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

months, caution is necessary in interpreting a single month's change.

The components of the Arizona index have moved in various directions since early 1984. The five components derived from the survey of purchasing managers have steadily, but slowly, declined, as have sensitive materials prices, although this component rose again in November and December. Both the residential building permits and average manufacturing workweek components fell during spring and summer 1984, and the latter has resumed its decline during the last four months, while the former has continued a slow rise that began in September. The unemployment insurance claims component rose through most of 1984 but has fallen during the last four months. The money supply rose slowly through much of 1984, but the rate has been more rapid since November.

The recent performance of each

component of the Arizona index is provided in Table 2, where the actual values have been converted to indexes. The net contribution of each component is calculated by multiplying its monthly change by its relative importance.

The national index has also had an inconsistent pattern in recent months. However, it did rise early in 1984 to a definite peak in May; monthly indexes since that time have clearly been lower. As of its most recent revision, the national index has not declined for three successive months. The national index may be indicating that the potential economic slowdown will be slightly more pronounced nationally than in Arizona. This was true during the third quarter, 1984, when GNP growth fell below its historical average, while adjusted Arizona GSP growth remained higher than its historical average.

OUTLOOK

The Arizona Index of Leading Economic Indicators and its national counterpart are pointing neither toward a resumption of solid, strong economic growth nor to an economic recession during 1985. Instead, oscillating economic activity is likely to continue. A detailed economic forecast begins on the front page of this issue.

— Luke Koons
Research Analyst

— Tom R. Rex
Research Manager

¹The index does not distinguish between a true recession and a "growth recession." The latter term refers to a period in which economic growth slows to less than its historical average, without contracting. The result is usually a mild version of the severe displacements to individuals, businesses and governments that occur during a true recession.

continued from page 1

enters a period of slower, inconsistent growth. This period sometimes ends in a recession; at other times, it precedes a new period of solid growth.

The recent inconsistency of economic growth coincides with a series of mixed signals from various economic indicators. It is important not to place too much significance on any single indicator, particularly on a monthly basis. Even the growth in the Gross National Product (GNP) has to be viewed with caution: The fluctuation of growth during the last

three quarters of 1984 (7.1 percent, 1.6 percent, and 4.9 percent, respectively) is relatively mild compared to the erratic growth of earlier mature expansions; the growth in one quarter should not be interpreted as an indicator of the growth in future quarters.

Recent fluctuations in growth seem to relate to changes in national monetary policy and to subsequent changes in interest rates. Thus, the recent acceleration of growth likely is a result of looser monetary policies adopted during fall 1984 by the Federal Reserve Board and of the decline in interest rates, which occurred

primarily from November through January. Since the Federal Reserve Board has already announced that it will not further loosen monetary policy, interest rates probably will fall no further and are expected to rise again by summer 1985. Thus, some slowing of economic growth is expected later this year.

NATIONAL FORECAST

In making its Arizona and Maricopa County economic forecasts, the Bureau of Business and Economic Research reviews forecasts for the national economy. In particular, the predictions of Data Resources, Inc.

(DRI) are analyzed in detail. The February 1985 DRI forecast calls for growth in GNP to exceed the historical average of 3 percent during the first half of 1985, with a slide below 3 percent thereafter. Changes in the growth rate are viewed as directly related to interest rate fluctuations.

Although growth is expected to again slow, no contraction is foreseen through 1985. Traditional signs of a recession are not currently apparent: wage and price inflation, material shortages, high utilization of production facilities, rising interest rates. However, the level of consumer debt is relatively high; further increases in this debt and rising interest rates could cause the economy to slow later this year. Other potential problems include the federal budget deficit and the trade deficit. According to DRI, "the economy will continue to oscillate, with the timing of peaks and troughs depending heavily on Federal Reserve policy

and the size and composition of new budget initiatives."

ARIZONA FORECAST

The Arizona economy set a number of records during 1984 in the wake of a strong year in 1983; thus, a slowing of growth during 1985 to more sustainable levels is inevitable. This slackening should not be viewed negatively: It will help prevent problems such as inflation from developing; and growth in 1985 is still expected to be better than average.

The current forecast of the Bureau of Business and Economic Research (BBER) is not substantially different from that made last December (see Table 1). Growth in the inflation-adjusted Arizona Gross State Product (GSP) is expected to average 7.2 percent during 1985, substantially less than the estimated record of 12.7 percent during 1984, but still greater than the 5.5 percent historical average.

Personal income, not inflation-adjusted, is expected to rise 10.1 percent during 1985, less than last year's 11.8 percent. This is still a very strong performance, particularly since much of the gain will be real, due to the continuation of moderate inflation during 1985. The forecast is slightly lower than that made last December because the lower interest rates of the last few months will cause the interest income portion of personal income to be less than otherwise expected during 1985.

Arizona and Maricopa County retail sales are expected to weaken during 1985 by proportions similar to those for personal income. With the inflation rate, measured by the Metropolitan Phoenix Consumer Price Index, expected to remain stable during 1985, the inflation-adjusted growth of retail sales will still be quite strong. The continued strength of the U.S. dollar is stabilizing inflation rates at a stage of the economic cycle when they usually would rise.

Population and Employment

While it is impossible to obtain accurate population counts except during censuses, most analysts agree that the 1984 population increase in Maricopa County and in Arizona as a whole was higher than in any prior year (see Figure 1). The population of Maricopa County rose by 82,000 people, according to BBER estimates, exceeding the 1973 record increase of 70,000 people. Much of the growth was probably stimulated by Arizona's unemployment rates—the lowest in the Sunbelt. The recent rise in the unemployment rate should slightly retard migration to Arizona during 1985. Still, an additional 70,000 people are expected in Maricopa County and 115,000 statewide.

The unemployment rate reached record lows in November 1984: 4.2 percent in Arizona and 3.2 percent in Maricopa County. Despite the record level of economic activity, such low unemployment rates surprised most analysts since they seemed to conflict with the very large population inflows.

Recently, the unemployment rate shot up dramatically, reaching 5.4 percent in Arizona and 4.2 percent in Maricopa County during January 1985. While this sharp rise reflects weakening economic conditions, it results more from the record population increase. Thus, such jumps in

TABLE 1
1985 ECONOMIC FORECAST

	Arizona		Maricopa County	
	1984 ^A	1985 ^F	1984 ^A	1985 ^F
Gross State Product (millions of 1972 dollars)	19,946 ^E	21,375	NA	NA
Percent Change	12.7	7.2	NA	NA
Personal Income (millions of current dollars)	35,311 ^E	38,880	NA	NA
Percent Change	11.8	10.1	NA	NA
Retail Sales (millions of current dollars)	19,426 ^E	21,375	12,406 ^E	13,775
Percent Change	11.8	10.0	13.1	10.3
Consumer Price Index Percent Change	NA	NA	5.8	5.7
Unemployment (percent)	5.0	5.7	3.8	4.5
Wage and Salary Employment (number in thousands)	1,181	1,250	770	820
Percent Change	9.6	5.8	11.1	6.5
Population (number in thousands)	3,095 ^E	3,210	1,740 ^E	1,810
Percent Change	4.5	3.7	4.9	4.0
New Single Family Housing Units Permitted (number)	30,845	28,250	20,774	19,000
Percent Change	- 0.3	- 8.4	- 0.9	- 8.5
New Multifamily Housing Units Permitted* (number)	47,539	23,775	36,817	15,000
Percent Change	43.0	- 50.0	53.8	- 59.3
Value of Building Permits (millions of current dollars)	5,282	4,425	3,811	3,100
Percent Change	44.0	- 15.9	54.3	- 18.7

A = Actual
E = Estimated
F = Forecast
NA = Not Available

* Apartment complexes of three or more units

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

unemployment should be temporary, with the rate later in 1985 drifting only slightly higher. An average of 5.7 percent is expected for Arizona and 4.5 percent for the Phoenix area. These unemployment rates are not much higher than the lowest rates reached during the expansion of the late 1970s (see Figure II).

Arizona added 103,000 wage and salary employees during 1984, easily surpassing the 1978 record of 86,000 new jobs. Employment in Maricopa County rose by 77,000,

breaking the 1978 record of 65,300 new jobs. Corresponding to generally slower economic growth during 1985, employment growth is also expected to decelerate.

Real Estate

The BBER real estate forecast has not changed since December. The number of new single family housing units permitted is predicted to decline slightly during 1985 from the 1983 and 1984 levels. This sector is likely to be strongest early in 1985; the ex-

pected rise in interest rates should slow the market later in the year.

The number of new multifamily housing units permitted (apartment complexes of three or more units) is still anticipated to decline sharply from the phenomenally high levels of 1984. The 36,817 units permitted in Maricopa County during 1984 was more than 50 percent higher than the number permitted in the record year of 1983; the 1985 forecasted level of 15,000 units is still historically high. Most of these permits are expected to be issued during the first few months of 1985. If apartment construction exceeds the forecast during 1985, it will be due to aggressive development and lending that is based on potential rather than on existing demand.

Construction activity in other sectors of the market is forecast to be similar in 1985 to its level in 1984. Industrial construction may rise slightly. Most of the expected decline in the value of building permits is a result of the projected decrease in apartment construction.

SUMMARY

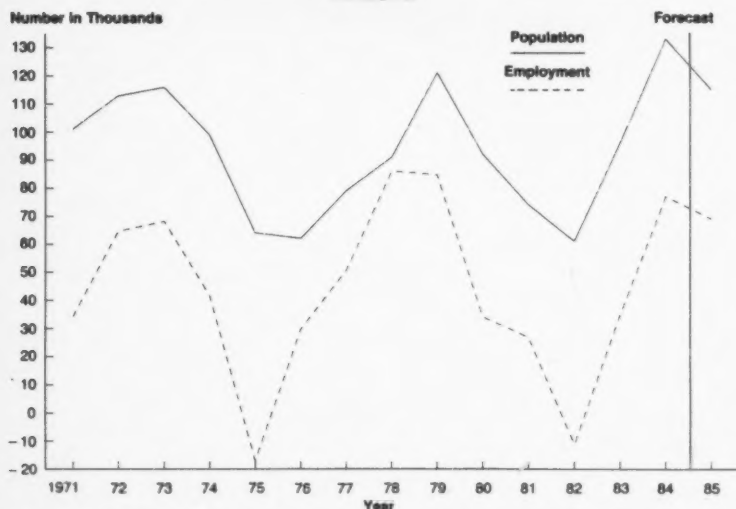
The economic expansion is now in its third year. The average length of peacetime expansions since World War II has been 34 months. Apparently, this one will exceed the average since it is expected to continue past October 1985.

As noted by DRI, the exact timing of the next recession will be even more difficult than usual to predict. Current conditions suggest that a slump will not occur during 1985. While a downturn during 1986 seems most likely, the expansion of the late 1970s lasted nearly five years, the longest ever during peacetime. If the current expansion matches this length, the next slump would not occur until the second half of 1987.

Response to the higher interest rates that are likely during the next few months should help to ascertain the timing of the next recession. Close watch of the Arizona Index of Leading Economic Indicators and its national counterpart should provide the earliest warning.

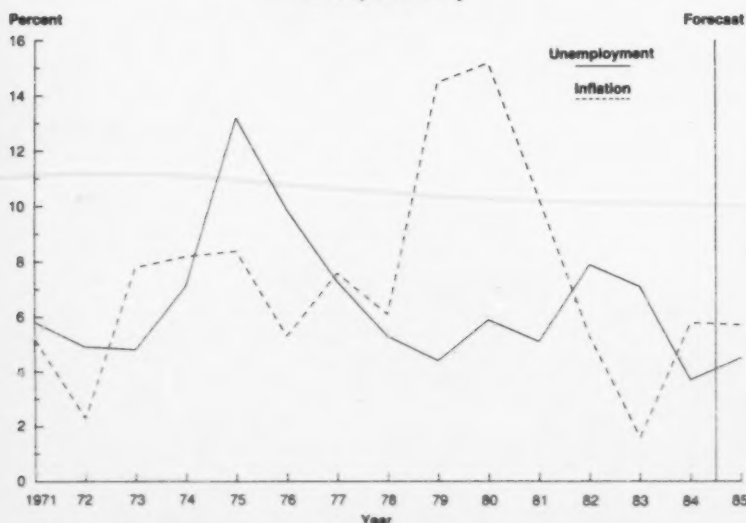
— Luke Koons
Research Analyst
— Tom R. Rex
Research Manager

**FIGURE I
CHANGE IN EMPLOYMENT AND POPULATION
Arizona**



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

**FIGURE II
UNEMPLOYMENT AND INFLATION RATES
Maricopa County**



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

¹Data Resources, Inc., *Review of the U.S. Economy*, February 1985, p. 2.

February Purchasing Indicators Sweep Upward

The economy was on an upward sweep in February, giving further evidence that the end-of-the-year pause was only temporary. All indicators of economic activity were positive for the second month in a row, with new orders received, production, and employment enjoying particularly strong growth.

The year is off to a good start, and the upward momentum is building. The growth plateau experienced in the final quarter of 1984 was only temporary, and the first quarter of 1985 will wind up on a very positive note. All of the pieces appear to be in place for further good economic news over the next several months. While it is unlikely that this current resumption of growth will be as strong as that experienced during the early part of 1984, the Arizona economy shows underlying strength.

Table 1 presents the results of the February survey of Arizona purchasing managers.

PRICES

Prices paid for major purchased items went up again in February, although at a slightly lower rate than in January. The economy is in good shape on the price front. From a very low price increase rate in December, the inflation rate now is stepping up, although it still is lower than in all except the final three months of 1984. The low rate of inflation will encourage the economy to enjoy a further extension of the measured growth rate it has experienced over the past two years.

DELIVERY TIME/INVENTORIES

Delivery time on shipments from vendors continued to stretch at about

the same rate as in January. This indicates that vendor backlogs still exist, typical in an expanding economy.

Inventory levels of purchased materials showed only a small increase in February, marking the eighth consecutive month of essentially level stocks. Inventories appear to be at a realistic level for the current rates of activity. If the current expansion continues, some inventory building probably will take place over the next two quarters.

NEW ORDERS/PRODUCTION

New orders received by Arizona firms advanced sharply in February. The rate of increase was twice as great as in January and the largest increase rate in eight months (since June 1984). This is a definite sign that Arizona's economic growth rate is accelerating at a good pace.

Production also accelerated at a healthy rate in February, boosted by the new order advances. The increase rate was well above that of January and the largest since May 1984.

EMPLOYMENT/PURCHASES

Employment moved up strongly, with a jump that was twice as great as in January and the largest since last October. After plateauing in November and December, Arizona firms now are back in the hiring mode, due to the increasing new order and production rates. Further employment hikes are likely over the next several months.

Purchases of materials and supplies by Arizona firms enjoyed its largest increase in seven months (since July 1984). The increasing purchase volume will provide further

stimulus to the expansionary trend and will move the economy to an even higher activity level.

— Harold Fearon

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity—higher, unchanged, or lower—of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

Arizona Wholesale Trade Jumps from '77 Levels

At the end of 1982, 4,555 wholesale trade establishments operated in Arizona, according to the Census of Wholesale Trade conducted by the U.S. Bureau of the Census. The number of establishments had increased 27 percent since the previous census in 1977.

The most common type of wholesale trade operation, constituting 82 percent of all establishments, was merchant wholesalers — those involved in buying and selling merchandise on their own account. Manufacturers' sales branches and offices made up 8 percent of all wholesale establishments, and agents, brokers, and commission merchants — those engaged in selling or buying goods for others — made up 10 percent of the total.

SALES VOLUME

The sales volume of all wholesale establishments was \$13.9 billion in
continued on page 15

**TABLE 1
FEBRUARY PURCHASING SURVEY**

Key Indicators	Percent of Purchasing Managers Indicating Each Response (February compared to January)		
	Higher	Same	Lower
Prices paid for major commodities	26	65	9
Delivery time from vendors	22	65	13
Purchased materials inventory level	29	46	25
New orders received	43	40	17
Production	43	45	12
Employment	28	57	15
Purchases	46	32	22

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona

Arizona Construction Soars Beyond Expectations in '84

At the beginning of 1984, nearly all forecasters were confident that construction activity during the year would be strong. The year ended, however, with results greatly exceeding even the most optimistic expectations. Stimulated by an expanding economy, the Arizona construction industry established a record \$5.3 billion in new projects permitted. Unlike previous years, the single family home sector was not the leader, replaced by the commercial and industrial sectors.

Total construction activity in Arizona during 1984 exceeded the 1983 records of \$3.6 billion and 105,618 permits, with the issuance of 105,665 building permits valued at \$5.3 billion. Maricopa County experienced a 54 percent increase in dollar value, from \$2.5 billion to \$3.8 billion. However, the number of permits issued declined slightly, from 63,567 during 1983 to 63,050 during 1984. Following a similar pattern, Pima County recorded a 25 percent improvement in dollar value, from \$609 million to \$774 million. The number of permits issued rose slightly, from 17,211 in 1983 to 17,525 in 1984.

Maricopa County continued to dominate Arizona construction activity, with 72 percent of the recorded dollar value; Pima County represented 15 percent of the total. Since the number of permits issued remained virtually unchanged from last year, much of the improvement can be attributed to the increased development of large projects, especially for

multifamily dwellings and offices (see Table 1).

SECTORAL ACTIVITY

Residential

Maricopa County. The single family home sector continued to play a subdued role in the real estate recovery. With 20,774 permits issued in 1984, this sector remained basically unchanged from the 20,961 permits recorded in 1983. While these are relatively high levels of activity, they are well below the record level of 30,479 permits issued in 1978.

The factor limiting construction of new single family homes continued to be relatively high interest rates. As shown in Figure 1, interest rates increased during spring and summer 1984, before declining to levels comparable to those in late 1983 (13.5 percent for conventional mortgages). Basically, the market was sustained by homebuilders using innovative financing arrangements such as buy-downs and mortgage bond programs. As in 1983, considerable effort and innovation were required to provide single family housing at affordable terms.

New single family (detached) home sales grew 5 percent from 9,558 homes during 1983 to 10,037 homes during 1984, while the median sales price increased from \$70,050 to \$76,950. Some of the price increase can be attributed to stronger sales activity for more expensive homes. In 1983, 30 percent of the new homes were sold for more than \$80,000,

in comparison to 43 percent during 1984. In the new townhouse/condominium market, sales activity rose from 2,541 units (median sales price of \$51,650) to 3,265 units (median sales price of \$62,600). This market has become increasingly important for singles or young households due to lower costs and attractive packages of amenities (swimming pools, tennis courts, and unique designs).

Because many households have found it difficult to improve their housing needs through the purchase of another home, they are doing more remodeling of their current home. Residential remodeling activity increased from \$40 million during 1983 to \$51 million during 1984, although the number of remodeling permits declined.

Rest of Arizona. Single family home activity in Pima County declined from 4,477 permits in 1983 to 4,110 permits during 1984. Mobile home activity, with 2,227 permits, accounted for 15 percent of the total housing units (15,379) authorized in Pima County. In contrast, only 3 percent of the 59,915 authorized housing units in Maricopa County were mobile homes.

Permits for single family homes in Arizona's other 13 counties increased 8 percent during 1984 to 5,961 permits. Greater activity was evident in Apache, Gila, Graham, Mohave, Navajo and Yuma counties (see the Arizona New Housing Starts report on page 14). Counties reporting a decline included Cochise and Pinal.

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
1983 and 1984

	COMMERCIAL									
	SINGLE FAMILY		APARTMENTS*		OFFICE BUILDINGS*		RETAIL STORES*		INDUSTRIAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
Maricopa County										
1984	20,774	1,374,586,500	1,978	929,512,939	382	350,980,149	795	168,106,286	691	223,545,470
1983	20,961	1,085,022,005	1,843	507,382,789	293	185,805,010	658	151,715,327	447	89,365,043
Pima County										
1984	4,110	238,515,692	338	165,788,823	120	76,733,411	79	12,519,169	64	28,585,865
1983	4,477	243,699,501	91	184,207,290	80	40,297,148	74	33,173,823	15	5,073,500
Rest of Arizona										
1984	5,961	263,983,225	113	74,345,784	157	14,797,678	340	63,533,585	122	22,700,411
1983	5,495	232,331,110	65	22,315,156	146	13,700,512	253	24,663,762	112	19,111,800
Arizona Total										
1984	30,845	1,877,065,417	2,427	1,180,627,546	660	442,511,263	1,214	234,158,020	867	274,831,548
1983	30,994	1,558,044,816	1,799	693,985,187	519	229,805,670	983	189,562,712	574	113,550,343

*Five or more housing units.

*Office, bank, medical and professional buildings.

*Shopping centers and other mercantile buildings.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

The mobile home sector continued to play an important role in the housing market of non-metropolitan counties: The 5,125 mobile home permits represented 56 percent of all such permits issued in the state. Mobile home activity exceeded single family activity in the counties of Graham, La Paz, Mohave, Pinal and Yuma. A mobile home permit does not necessarily mean the addition of a new housing unit; it may simply record the movement of a unit.

Commercial

Maricopa County. The commercial sector recorded a strong increase from 3,577 permits valued at \$927 million during 1983 to 4,532 permits worth \$1.7 billion during 1984. The multifamily sector, which consists mostly of apartment projects of five or more units and condominium complexes designed primarily for rental, led the gains. For the second consecutive year, multifamily units permitted (34,284) exceeded single family units permitted (20,774). Much of the multifamily activity was located in Mesa (9,420 units), Phoenix (12,346 units), and Glendale (4,453 units). During the last two years, 55,684 multifamily units have been authorized, more than the 53,195 units permitted from 1978 through 1982. Due to strong in-migration and increased household formation, the

metropolitan vacancy rate has remained close to the historical norm.

The office building sector continued a strong level of construction activity, rising from 293 permits valued at \$186 million to 382 permits worth \$351 million. Leading areas of activity were Phoenix (192 permits at \$232 million), Tempe (20 permits at \$36 million), Scottsdale (63 permits at \$40 million), and Mesa (47 permits at \$24 million). With the addition of the high-rise or large-scale project, the office building market has been undergoing fundamental changes.

Stimulated by new housing subdivisions, increased consumer spending and new retail concepts (targeting and off-price), permits for retail buildings increased from 656 worth \$132 million to 795 valued at \$168 million. Retail activity was especially strong in Mesa (53 permits at \$40 million), Phoenix (191 permits at \$48 million), Tempe (46 permits at \$24 million), and the unincorporated area of the county (395 permits at \$40 million).

The hotel/motel sector also demonstrated a strong level of activity, with 53 permits valued at \$58 million. Mesa led all cities, with 6 permits worth \$33 million, followed by Scottsdale (30 permits at \$8 million), Phoenix (3 permits at \$8 million), and Paradise Valley (2 permits at \$5 million).

Rest of Arizona. Pima County ex-

perienced a 31 percent increase in the value of new commercial projects, from \$247 million in 1983 to \$344 million in 1984. As in Maricopa County, multifamily activity led the sector, with 8,619 authorized units, an 11 percent increase over 1983; the number of multifamily units permitted also exceeded the 4,110 single family permits.

Table 1 shows new office building projects worth \$76 million were permitted, with \$56 million of the total in the city of Tucson. Only the retail sector declined from 1983 (\$33 million to \$13 million). The hotel/motel sector had 14 permits worth \$57 million, with \$40 million in permits for projects in the unincorporated areas of the county.

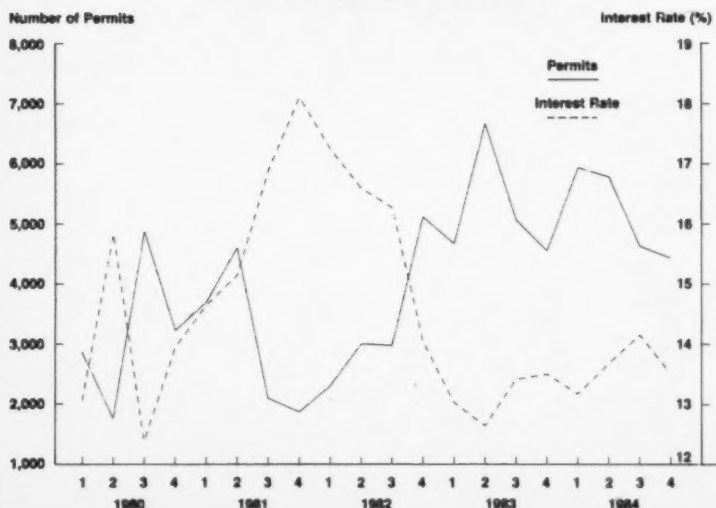
Like its counterpart in the metropolitan counties, the multifamily sector in Arizona's other counties improved, rising from 55 permits worth \$22 million in 1983 to 113 permits valued at \$74 million in 1984. Active areas included Sierra Vista (152 units), unincorporated Coconino County (168 units), Lake Havasu City (188 units), Mohave Valley North (322 units), unincorporated Pinal County (184 units), and Prescott (129 units). The office building sector remained virtually unchanged, at 157 permits valued at \$15 million, in comparison to 146 permits estimated at \$14 million in 1983.

After a one-year decline, the retail sector rejuvenated itself, rising from 253 permits valued at \$25 million in 1983 to the 1984 level of 340 permits worth \$54 million. Some areas of strong activity included Bisbee (3 permits at \$1.7 million), Sierra Vista (28 permits at \$9.1 million), Lake Havasu City (15 permits at \$2.5 million), Mohave Valley North (50 permits at \$8.3 million), and Prescott (15 permits at \$2.2 million).

Industrial

Maricopa County. The industrial sector dramatically continued the expansion started in 1983. During 1984, the number of permits increased 51 percent, from 447 permits to 661 permits, while dollar value rose 144 percent, from \$89 million to \$224 million. As in past years, the leading cities were Phoenix (231 permits at \$90 million) and Tempe (294 permits worth \$58 million). Several cities recorded strong improvement over 1983, such as Chandler, moving from 4 permits (\$1 million) to 10 permits

FIGURE 1
SINGLE FAMILY PERMITS ISSUED AND
CONVENTIONAL MORTGAGE INTEREST RATES
Maricopa County, 1980-84



Source: NEWS, Federal Home Loan Bank Board and Arizona Real Estate Institute, College of Business, Arizona State University.

TABLE 2
EXPECTED PERCENTAGE RATES FOR 1985 ECONOMIC VARIABLES

Economic Indicators	SURVEY RESPONDENT GROUP									
	HOME BUILDING		FINANCIAL SERVICE		REAL ESTATE BROKERAGE		OTHER		CONSENSUS	
	Mode	Median	Mode	Median	Mode	Median	Mode	Median	Mode	Median
Conventional mortgage rate	13.0	13.0	13.5	13.2	13.5	13.0	12.0	12.9	13.0	13.0
FHA mortgage rate	12.5	12.5	12.5	12.5	12.0	12.4	12.5	12.2	12.5	12.5
Prime interest rate	11.0	11.2	11.0	11.1	12.0	10.9	11.0	11.0	11.0	11.0
Inflation rate (Phoenix)	5.0	5.0	5.0	5.0	5.0	4.9	5.0	5.1	5.0	5.0
Apartment vacancy rate	7.0	8.2	8.0	11.0	5.0	8.9	10.0	9.0	10.0	9.0
Commercial interest rate	14.0	13.9	13.5	13.5	13.0	13.0	13.0	13.1	13.0	13.0
Six-month Treasury Bill rate	9.5	9.8	10.0	9.5	10.0	9.8	10.0	9.7	10.0	9.8
Unemployment in Phoenix	4.0	4.8	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

Mode = most common response; Median = middle value in range.

Sources: Survey conducted by the Arizona Real Estate Institute, College of Business, Arizona State University, 1985.

(\$22 million); Scottsdale, increasing from 13 permits (\$5 million) to 30 permits (\$18 million); and Glendale, improving from no industrial activity to 44 permits (\$10 million). While some of the new projects will be utilized for classical industrial activity such as manufacturing, others will provide inexpensive space and good locations for office and retail functions.

Rest of Arizona. For the first time since 1979, Pima County reported a strong level of industrial activity. During 1984, 84 permits worth \$29 million were issued, in contrast to only 15 permits valued at \$5 million during 1983. Most of the industrial projects were permitted in the unincorporated areas of the county (54 permits at \$23 million).

Industrial activity in the non-metropolitan counties increased slightly from the 1983 level of 112 permits (\$19 million) to 122 permits (\$23 million) in 1984. Casa Grande continued to expand its economic base, with 3 permits worth \$11 million. Other areas of industrial activity included unincorporated Yuma County (17 permits at \$2 million), Flagstaff (14 permits at \$1.3 million), and unincorporated Coconino County (3 permits at \$2.2 million).

Other Sectors

The final major category of building activity includes permits for both private and public projects. Private sector building projects are as diverse as swimming pools, fences, and churches, while the public projects include schools and municipal facilities.

In Maricopa County, the total number of permits remained unchanged

at 27,377, while the estimated value increased 56 percent, from \$294 million to \$459 million. Examples of specific types of construction are churches (50 permits at \$19 million), government buildings (43 permits at \$27 million), and schools (51 permits at \$29 million). The greatest increase was for health care facilities, such as hospitals and nursing homes: from 17 permits worth \$14 million in 1983 to 31 permits valued at \$91 million in 1984.

Pima County had a similar pattern, in which activity rose slightly, from 6,662 to 6,843 permits, while dollar value improved 36 percent, from \$93 million to \$133 million. Areas of activity included churches (9 permits at \$4 million), schools (6 permits at \$5 million), and public buildings (22 permits at \$25 million).

The non-metropolitan counties also showed improvement in the "other" category, with the value of construction rising from \$74 million in 1983 to \$93 million in 1984. The dominant type of construction was health care facilities (25 permits at \$27 million) in locations such as Payson (4 permits at \$2.4 million), Mohave Valley North (a \$1.3 million project), Apache Junction (a \$2.8 million project), Casa Grande (a \$2.1 million facility), Cottonwood (2 permits at \$2.4 million), and Yuma (3 permits at \$12 million).

OUTLOOK FOR 1985

Record construction activity during 1984 coincided with the rapid growth of the Arizona economy (12.7 percent as measured by the Arizona Gross State Product). The outlook for 1985 is not as promising. The state's economy is expected to achieve only moderate growth of 7.2

percent. Further, the Arizona Index of Leading Economic Indicators is signaling a continuation of the moderate, inconsistent economic growth that was evident during the latter part of 1984. More specifically, retail sales and personal income are expected to grow 10 percent, inflation will be stable at 5.7 percent, and unemployment will rise to 4.5 percent in Maricopa County (5.7 percent statewide). Given these projections, total dollar value of construction activity should decline to \$4.4 billion for the entire state and \$3.1 billion in Maricopa County.

The fundamental obstacle for 1985 continues to be the federal deficit, which has replaced inflation as the primary economic concern. The deficit affects capital availability and costs because the government must claim an increasing share of the limited investment pool. How the deficit is confronted will affect the confidence outlook of consumers and businesses alike.

The single family housing sector is expected to decline slightly in 1985, to 28,250 permits in the state, of which 19,000 will be in Maricopa County. Because interest rates are not expected to fall much further, most of the construction activity will take place in the early part of 1985. The move-up market (more expensive and larger homes) strengthened in 1984 and is expected to improve during 1985. Due to continuing increases in land prices, new home prices are expected to rise faster than the inflation rate.

Increased demand and abundant financing led the multifamily market to defy all expectations and set a

continued on page 15

More Single Females Buy Homes in '84

Single females purchased 6,800 homes during 1984, an increase of 16 percent from 1983, leading the 10 percent gain in Phoenix metropolitan home sales. Purchases of new townhouses and condominiums by females rose the most, 33 percent. Single females continued to represent an ever-larger share of Phoenix homebuyers, purchasing 12 percent of the 55,650 homes sold during 1984.

The median price of homes purchased by single females grew the most during 1984, 8 percent. Single females now buy nearly as expensive resale homes as single males (\$65,500) but continue to buy less expensive new homes (a median price of \$67,300 compared to \$69,825 by single males).

While single females bought nearly as many townhouses and condominiums as single males during 1984, they bought far fewer single family homes (4,900 compared to 8,500). However, the proportion of all single family homes that are purchased by females continued to rise during 1984; the share of single family homes purchased by single males remained constant. Single people purchased 46 percent of all townhouses and condominiums and 28 percent of all single family homes sold during 1984.

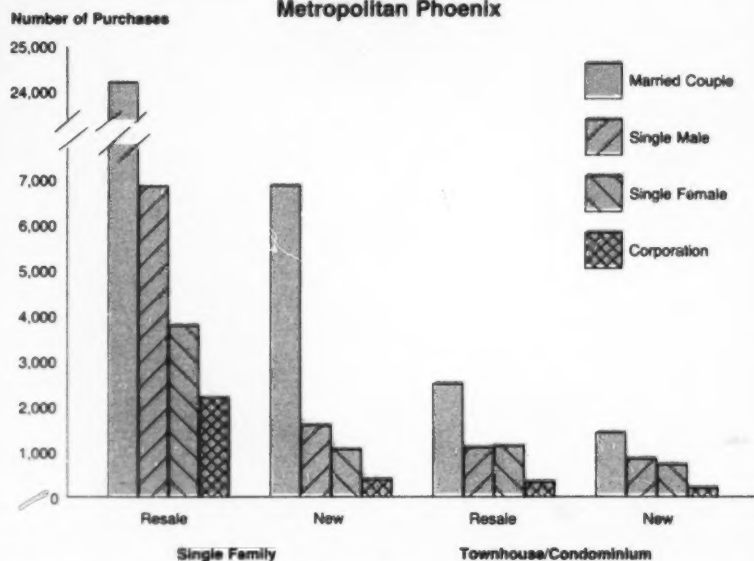
COUPLES AND CORPORATIONS

Sales of homes to married couples still make up the majority of the market, as seen in Figure I. Couples purchased 35,150 homes during 1984, 63 percent of the Phoenix area total. They are especially likely to buy single family homes, representing two-thirds of this market, but their 4,000 condominium and townhouse purchases accounted for only one-half of this type of home sale.

Corporations are the other type of homebuyer, usually purchasing homes as an investment, but their share of the market continued to shrink to 6 percent (3,200 sales) in 1984. Corporations bought new townhouses and condominiums in greater numbers during 1984 (575 compared to 350 in 1983), while purchasing fewer resale single family homes (2,225 compared to 2,350 in 1983), traditionally the more common

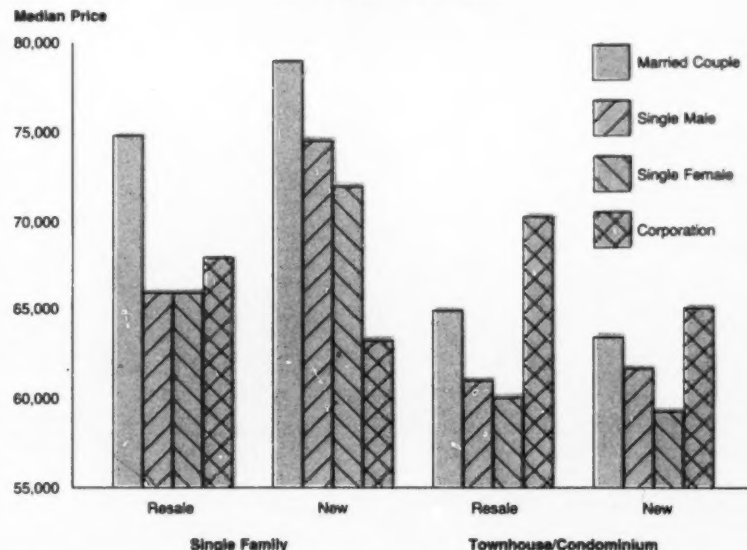
APRIL 1985

FIGURE I
1984 HOMEBUYERS
Metropolitan Phoenix



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE II
1984 HOME PRICES BY TYPE OF BUYER
Metropolitan Phoenix



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

sale to the corporate market.

Married couples continued to purchase more expensive homes than the other categories of homebuyer (see Figure II). The median price of homes purchased by couples was \$74,500, 5 percent more than the overall median of \$71,025, while the

median price of homes purchased by each of the other groups was approximately 5 percent less than the overall median. Corporations, however, bought the most expensive townhouses and condominiums.

— Tom R. Rex
Research Manager

Arizona Building Permits: Annual Report

January-December, 1984	Residential		Commercial		Industrial		Other		Total	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
APACHE COUNTY										
Engle	73	2,018,030	6	1,265,900	0	0	4	26,600	83	3,310,530
St. Johns	38	46,500	1	N/C	0	0	0	0	39	46,500
Springville	29	N/C	1	N/C	0	0	3	N/C	33	N/C
Unincorporated	77	1,088,626	1	53,000	0	0	22	108,241	100	2,118,067
Total, Apache County	217	3,933,356	9	1,318,900	0	0	29	222,841	255	5,475,097
Percent Change, Previous Year	32	19	-54	84	0	0	20	-86	22	-44
COCHISE COUNTY										
Benson	45	361,400	2	47,000	0	0	18	142,739	65	551,139
Bellevue	32	425,200	7	2,197,000	0	0	5	964,446	74	3,586,646
Douglas	123	1,421,048	0	0	0	0	185	850,611	308	2,071,659
Huachuca City	62	126,413	3	334,440	3	329,375	6	169,370	74	959,598
Sierra Vista	336	9,033,609	29	11,307,248	0	0	882	2,065,120	1,249	23,206,175
Tombstone	38	121,265	3	24,245	0	0	56	260,490	98	408,030
Unincorporated	514	15,774,929	47	13,411,600	5	430,800	154	5,892,027	720	35,509,356
Wilcox	34	105,350	7	2,501,584	0	0	37	67,748	78	2,674,682
Total, Cochise County	1,217	27,369,444	98	29,823,115	5	760,175	1,343	11,012,545	2,665	68,965,279
Percent Change, Previous Year	-19	-13	2	37	0	40	14	97	-3	12
COCONINO COUNTY										
Flagstaff	668	31,527,563	74	4,086,409	14	1,327,500	281	3,058,652	1,038	40,810,154
Fredonia	24	53,050	2	2,500	0	0	10	24,788	36	80,338
Page	190	3,779,309	5	2,767,080	3	86,173	35	958,770	233	7,593,332
Unincorporated	829	19,676,440	23	51,030,541	3	2,205,906	94	824,548	949	73,737,441
Williams	43	774,839	4	1,016,800	2	62,000	50	55,801	99	1,898,039
Total, Coconino County	1,770	55,611,296	108	69,503,130	22	3,683,579	470	4,912,350	2,375	123,910,304
Percent Change, Previous Year	-2	9	30	481	119	30	-20	4	-5	79
GILA COUNTY										
Globe	30	136,975	1	350,000	0	0	37	309,740	68	796,724
Hayden	3	1,750	0	0	0	0	16	13,080	19	14,840
Miami	10	61,044	1	3,000	0	0	3	4,300	14	68,344
Payson	411	3,515,643	11	1,978,914	20	730,666	42	2,930,466	484	9,155,688
Unincorporated	495	11,679,032	15	319,000	1	28,000	64	2,960,965	575	14,988,997
Total, Gila County	949	15,394,444	28	2,650,914	21	758,666	162	6,218,570	1,180	25,022,593
Percent Change, Previous Year	1	33	3	104	-8	105	-20	558	-2	76
GRAHAM COUNTY										
Pinal	47	266,362	1	10,000	0	0	30	60,510	78	336,872
Safford	108	1,824,461	31	685,505	4	422,387	20	424,871	163	3,157,226
Thatcher	63	1,339,000	0	0	1	4,500	7	229,800	71	1,573,360
Unincorporated	204	2,366,339	11	175,300	0	0	5	211,900	220	2,745,539
Total, Graham County	420	5,567,162	43	970,805	5	426,887	62	927,081	530	7,811,937
Percent Change, Previous Year	19	52	43	41	400	184	1	-50	19	23
GREENLEE COUNTY										
Cotton	4	N/C	0	0	0	0	0	0	4	N/C
Duncan	4	79,300	0	0	0	0	5	11,500	9	90,800
Unincorporated	4	38,750	0	0	0	0	1	3,500	5	42,250
Total, Greenlee County	12	118,050	0	0	0	0	6	15,000	18	133,050
Percent Change, Previous Year	50	39	-100	-100	0	0	0	-99	12	-93
LA PAZ COUNTY										
Parler	36	194,828	4	341,800	0	0	19	28,052	59	564,680
Unincorporated	296	4,057,482	10	723,210	6	254,665	103	986,179	415	6,021,556
Total, La Paz County	332	4,252,310	14	1,065,010	6	254,665	122	1,014,231	474	6,586,236
Percent Change, Previous Year	33	2	39	300	9,999	9,999	31	-18	35	17
MARICOPA COUNTY										
Avondale	196	2,596,850	8	670,740	1	280,800	64	306,527	269	3,849,217
Buckeye	29	79,100	3	96,000	1	50,000	14	216,500	47	444,600
Chandler	3,098	189,892,818	119	44,016,784	10	21,807,631	3,967	38,282,143	7,214	294,799,356
El Mirage	47	1,675,140	7	1,393,201	0	0	21	186,450	75	3,366,791
Gila Bend	3	86,082	3	22,600	1	2,000	18	82,870	31	205,682
Gilbert	416	21,805,904	34	8,986,374	12	4,218,938	186	2,652,742	650	37,291,958
Glendale	1,746	83,331,637	512	122,526,179	44	10,180,811	1,416	22,785,894	3,718	248,836,721
Goodyear	28	430,203	8	841,900	2	4,823,000	114	1,315,450	152	7,210,553
Guadalupe	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Heath	2,981	175,478,913	488	442,181,242	19	3,806,174	3,089	94,383,037	6,517	721,846,366
Paradise Valley	294	19,716,440	6	5,534,041	0	0	353	2,961,482	623	29,211,963
Peoria	1,827	47,856,277	30	10,334,804	4	430,798	1,633	7,228,085	3,494	65,851,972
Phoenix	9,067	409,522,156	1,653	804,578,136	231	90,040,283	7,172	179,399,011	18,153	1,283,539,598
Scottsdale	2,126	232,771,802	473	198,091,431	30	17,963,036	2,071	71,201,406	4,708	520,017,475
Surprise	50	830,697	34	3,765,572	4	543,000	58	860,534	146	5,099,799
Tempe	1,468	78,323,240	585	146,780,400	294	58,102,000	586	15,880,300	3,245	296,695,940
Tucson	15	490,497	3	1,703,965	1	475,000	3	395,478	22	3,054,938
Unincorporated	7,050	207,319,187	560	80,624,843	4	5,027,000	0,299	19,149,641	13,882	312,120,686
Wickenburg	34	1,049,060	14	2,078,380	3	197,000	9	487,910	60	3,822,350
Youngtown	14	611,770	2	235,000	0	0	13	585,735	29	1,412,505
Total, Maricopa County	30,460	1,454,173,788	4,552	1,674,028,574	861	223,545,470	27,377	459,105,003	63,050	3,810,851,435
Percent Change, Previous Year	-6	25	24	75	51	144	0	56	-1	52

Arizona Building Permits: Annual Report (continued)

January-December, 1984	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
MOHAVE COUNTY										
Kingman City	302	3,734,180	48	8,071,883	0	0	54	801,409	302	12,207,482
Kingman Area	511	6,197,421	37	1,367,703	5	1,165,342	515	856,673	1,088	9,817,144
Lake Havasu City	614	23,076,824	44	8,889,949	1	12,730	184	1,224,561	823	33,204,084
Lake Havasu Area	53	751,545	9	860,881	0	0	59	180,307	121	1,622,733
Mohave Valley North	1,233	20,184,908	180	21,786,185	2	174,800	825	6,156,178	2,220	44,252,049
Mohave Valley South	1,084	14,986,049	50	2,679,694	0	0	474	1,369,804	1,808	19,085,547
Dolan Springs	90	1,506,301	2	42,872	0	0	93	168,033	191	1,717,206
Secramento Valley	166	2,252,026	10	168,830	0	0	125	258,154	301	2,679,010
Mohave General	134	2,427,272	8	200,682	1	294,000	51	376,329	192	3,298,283
Total, Mohave County	4,093	75,116,534	364	43,906,684	9	1,846,872	2,360	11,421,468	6,826	132,063,558
Percent Change, Previous Year	19	40	58	94	125	168	-15	51	6	61
NAVAJO COUNTY										
Holbrook	14	121,100	4	198,000	0	0	15	153,500	33	472,600
Show Low	154	3,019,439	7	1,763,842	0	0	72	972,051	233	5,755,332
Snowflake	35	1,980	0	0	0	0	2	1,728	37	3,708
Taylor	12	287,000	0	0	2	25,000	2	9,000	16	321,000
Unincorporated	849	20,130,754	11	967,785	1	68,400	48	855,761	909	22,042,710
Window	65	1,088,134	8	832,520	0	0	17	286,500	90	2,187,154
Total, Navajo County	1,129	24,828,407	30	3,782,157	3	93,400	156	2,278,540	1,319	30,782,504
Percent Change, Previous Year	-7	9	3	0	-50	-78	-31	-11	-10	5
PIMA COUNTY										
Marana	44	N/C	0	0	0	0	5	N/C	49	N/C
Oro Valley	61	3,846,352	1	30,000	0	0	32	224,416	94	4,103,768
South Tucson	20	436,602	3	953,447	3	348,520	33	474,920	59	2,214,489
Tucson	3,526	71,500,694	309	183,008,467	27	5,338,236	4,101	89,796,282	7,957	330,242,639
Unincorporated	6,260	193,051,636	380	159,323,186	54	22,897,909	2,672	62,584,156	9,366	437,856,866
Total, Pima County	9,911	206,838,253	687	343,915,070	84	28,585,665	6,843	133,079,774	17,525	774,417,762
Percent Change, Previous Year	-3	0	128	31	459	477	0	36	0	22
PINAL COUNTY										
Apache Junction	598	8,580,888	36	3,286,244	1	12,000	556	6,439,386	1,151	18,316,538
Casa Grande	97	3,089,589	22	2,212,558	3	10,843,078	92	4,600,744	215	20,745,949
Coolidge	67	285,770	2	289,100	0	0	23	69,450	92	624,320
Eloy	31	178,474	2	25,500	1	300,000	32	54,088	66	558,072
Florence	54	185,925	6	392,000	0	0	14	9,754	74	567,679
Keamy	6	61,050	0	0	0	0	11	16,915	17	77,974
Mammoth	4	N/C	0	0	0	0	2	65,000	6	65,000
Superior	14	58,906	1	2,500	0	0	11	21,100	26	82,506
Unincorporated	737	6,677,215	47	6,627,750	4	744,000	295	2,736,916	1,083	18,784,891
Total, Pinal County	1,568	21,097,816	116	12,835,652	5	11,266,078	1,037	14,013,373	2,730	59,845,919
Percent Change, Previous Year	-6	-18	-16	-25	-35	8	12	5	-3	-11
SANTA CRUZ COUNTY										
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	17	129,229	0	0	0	0	7	191,193	24	320,422
Unincorporated	110	5,278,086	0	0	1	350,000	30	3,448,209	144	9,074,275
Total, Santa Cruz County	127	5,407,295	0	0	1	350,000	40	3,637,402	168	9,394,697
Percent Change, Previous Year	4	-8	-100	-100	9,999	9,999	-27	126	-5	23
YAVAPAI COUNTY										
Chino Valley	159	2,610,844	7	232,400	1	15,000	63	684,343	230	3,522,387
Clartdale	37	1,231,168	2	75,179	0	0	28	225,928	67	1,532,275
Cottonwood	123	3,000,391	34	3,327,984	5	188,969	48	2,771,110	200	9,286,378
Jerome	23	54,600	0	0	0	0	3	8,000	26	60,600
Prescott	526	15,030,307	50	9,643,203	3	291,040	570	5,497,689	1,149	30,462,219
Prescott Valley	308	9,391,937	17	1,048,271	3	160,800	123	852,673	451	11,454,881
Unincorporated	1,691	55,825,867	82	9,123,184	6	245,260	457	4,100,736	2,226	69,296,027
Total, Yavapai County	2,867	87,144,914	182	23,451,221	18	902,013	1,282	14,118,459	4,359	125,816,907
Percent Change, Previous Year	-7	14	50	84	-59	-20	1	5	-3	21
YUMA COUNTY										
Somerton	48	1,553,845	1	22,000	0	0	17	880,984	66	2,256,829
Unincorporated	1,115	28,967,579	37	5,992,078	17	1,824,990	243	2,262,435	1,412	38,036,982
Wellton	4	74,500	0	0	0	0	1	800	5	75,300
Yuma	446	11,874,074	42	7,506,937	3	100,165	237	20,108,483	728	39,590,039
Total, Yuma County	1,613	42,459,998	80	13,521,015	20	1,925,055	408	23,053,482	2,211	80,959,550
Percent Change, Previous Year	17	21	118	112	81	-6	6	336	17	86
TOTAL, ARIZONA	56,710	2,091,333,007	6,291	2,210,672,247	987	274,831,546	41,787	685,029,739	105,686	5,261,866,529
PERCENT CHANGE, PREVIOUS YEAR	-2	19	32	67	51	138	-1	40	0	44

*Includes mobile homes

N/R: No Report

N/C: Some communities do not collect dollar valuations.

9,999: The prior period had no activity or the percent change is greater than 9,999.

-100: The current period had no activity, but the prior period did have activity.

Arizona New Housing Starts: Annual Report

January-December, 1984

	Building Permits Issued					Total Housing Units
	One Family	Mobile Homes	Duplex	2-4 Family	5 or More	
APACHE COUNTY						
Eager	44	13	0	0	1	61
St. Johns	18	26	0	0	0	36
Springville	15	3	0	0	1	36
Unincorporated	59	3	0	1	0	65
Total, Apache County	136	55	0	1	2	292
Percent Change, Previous Year	67	0	-100	0,999	0,999	73
COCHISE COUNTY						
Benson	0	26	0	0	0	26
Bisbee	0	0	0	0	1	15
Douglas	10	0	0	0	0	10
Husachuca City	0	18	0	0	0	18
Sierra Vista	219	63	0	0	1	431
Tombstone	7	11	0	1	0	21
Unincorporated	280	229	2	0	3	496
Wilcox	1	11	0	0	0	12
Total, Cochise County	440	360	2	1	5	969
Percent Change, Previous Year	-21	-20	130	-94	-44	-37
COCONINO COUNTY						
Flagstaff	396	83	40	9	1	967
Fredonia	1	15	0	0	0	16
Page	40	78	0	3	0	137
Unincorporated	380	240	0	0	2	785
Williams	0	10	1	0	0	21
Total, Coconino County	622	436	41	12	3	1,599
Percent Change, Previous Year	-1	-13	485	19	0	9
GILA COUNTY						
Globe	3	0	0	0	0	3
Hayden	0	0	0	0	0	0
Yuma	1	0	0	0	0	1
Payson	94	111	1	0	5	299
Unincorporated	245	125	0	0	0	370
Total, Gila County	343	236	1	0	5	670
Percent Change, Previous Year	15	7	0	0	0,999	24
GRAHAM COUNTY						
Pima	1	18	0	0	0	19
Safford	32	5	0	1	0	41
Thatcher	18	26	0	0	0	44
Unincorporated	20	112	0	1	0	136
Total, Graham County	71	161	0	2	0	240
Percent Change, Previous Year	115	11	0	100	0	32
GREENLEE COUNTY						
Clifton	0	1	0	0	0	1
Duncan	1	1	0	0	0	2
Unincorporated	2	1	0	0	0	3
Total, Greenlee County	3	3	0	0	0	6
Percent Change, Previous Year	200	0,999	-100	0	0	100
LA PAZ COUNTY						
Parlier	1	5	0	0	1	11
Unincorporated	12	177	0	0	0	189
Total, La Paz County	13	182	0	0	1	200
Percent Change, Previous Year	-96	32	0	0	0,999	19
MARICOPA COUNTY						
Avondale	82	106	0	3	1	170
Buckeye	4	22	0	1	0	30
Chandler	2,702	0	10	17	75	4,225
El Mirage	2	3	10	0	0	25
Gila Bend	4	0	0	0	0	4
Gilbert	347	1	22	0	23	694
Glendale	1,441	12	11	0	357	5,973
Goodyear	8	9	0	0	0	17
Guadalupe	N/R	N/R	N/R	N/R	N/R	N/R
Mesa	2,542	1	41	110	129	12,482
Paradise Valley	86	0	0	0	0	86
Peoria	1,800	0	0	0	3	2,000
Phoenix	5,536	242	186	286	904	19,559
Scottsdale	1,797	1	2	66	506	4,286
Surprise	5	32	0	2	0	40
Tempe	972	0	12	33	199	3,694
Tolleson	7	0	2	0	1	67
Unincorporated	3,873	1,314	0	75	80	6,439
Wickenburg	28	1	1	8	3	67
MOHAVE COUNTY						
Kingman City	84	20	4	0	0	112
Kingman Area	44	227	0	0	0	271
Lake Havasu City	432	30	36	8	12	793
Lake Havasu Area	8	34	0	0	0	40
Mohave Valley N.	284	443	2	14	45	1,048
Mohave Valley S.	434	381	0	1	0	819
Dolan Springs	19	45	0	0	0	64
Sacramento Valley	17	86	0	0	0	103
Mohave General	46	55	0	0	0	101
Total, Mohave County	1,908	1,921	41	29	57	3,311
Percent Change, Previous Year	44	35	1,296	91	200	81
NAVAJO COUNTY						
Holbrook	2	3	0	0	0	4
Show Low	40	53	4	0	0	101
Snowflake	18	0	0	0	0	18
Taylor	5	1	0	0	0	6
Unincorporated	498	20	1	1	0	522
Winlow	17	14	0	0	0	31
Total, Navajo County	576	90	5	1	0	660
Percent Change, Previous Year	13	-93	0,999	0,999	-100	-15
PIMA COUNTY						
Marana	3	39	0	0	0	42
Oro Valley	48	0	0	0	0	48
South Tucson	5	0	0	0	0	5
Tucson	1,042	519	125	49	99	6,261
Unincorporated	3,011	1,989	0	0	267	9,022
Total, Pima County	4,110	2,227	125	49	336	15,379
Percent Change, Previous Year	-13	-1	35	36	268	2
PINAL COUNTY						
Apache Junction	81	408	0	11	1	536
Casa Grande	36	8	2	0	0	45
Coolidge	1	24	0	0	1	37
Eloy	3	8	1	0	0	13
Florence	1	38	1	5	1	66
Keamy	1	0	0	0	0	1
Mammoth	1	3	0	0	0	4
Superior	2	0	0	0	0	2
Unincorporated	208	361	25	13	9	574
Total, Pinal County	333	866	29	29	12	1,578
Percent Change, Previous Year	-21	7	282	-53	71	2
SANTA CRUZ COUNTY						
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	1	9	0	0	0	10
Unincorporated	94	0	0	0	0	94
Total, Santa Cruz County	95	9	0	0	0	104
Percent Change, Previous Year	4	50	-100	-100	0	-4
YAVAPAI COUNTY						
Chino Valley	38	89	0	0	0	125
Clarkdale	17	5	0	0	0	22
Cottonwood	41	33	2	4	0	85
Jerome	1	0	0	0	0	1
Prescott	243	82	1	10	14	484
Prescott Valley	170	57	18	8	0	284
Unincorporated	886	404	14	13	5	1,437
Total, Yavapai County	1,384	640	35	35	19	2,418
Percent Change, Previous Year	2	-26	28	118	72	-6
YUMA COUNTY						
Bonerton	32	2	0	0	0	34
Unincorporated	280	880	8	1	0	965
Wellton	0	2	0	0	0	2
Yuma	167	33	2	8	3	365
Total, Yuma County	489	787	8	7	8	1,355
Percent Change, Previous Year	11	26	100	133	300	28
TOTAL, ARIZONA	30,845	9,098	576	786	2,427	68,634
PERCENT CHANGE, PREVIOUS YEAR	-2	0	3	-1	32	17

N/R: No Report

0,999: The prior period had no activity or the percent change is greater than 9,999

-100: The current period had no activity, but the prior period did have activity.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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1982, an increase of 72 percent since 1977, but most of this gain was due to inflation. While the sales of merchant wholesalers rose the most, 88 percent, this type of operation produced only 60 percent of all sales in 1980, indicating a relatively low volume of sales per establishment (\$2.2 million). The average sales of all wholesale establishments were \$3.0 million.

Wholesale trade establishments in the Phoenix metropolitan area had sales of \$10.9 billion in 1982, 78 percent of the state's total, and numbered 3,083, which was 68 percent of the state's total. Wholesale firms in the city of Phoenix produced sales of \$7.9 billion, 57 percent of the state's total.

Despite a population only one-third that of Tucson, Tempe's sales volume of \$1.3 billion was greater than Tucson's \$1.1 billion. Scottsdale wholesalers sold \$0.5 billion worth of

goods, while sales in Mesa and Glendale were less than in Nogales (\$0.3 billion), a town with only 15,000 residents. The large sales volume in Nogales was due to its proximity to Mexico.

EMPLOYMENT

Arizona's wholesale trade industry employed 52,400 workers during March 1982, an average of 12 per establishment. The annual payroll of wholesale establishments was \$906 million, an average of \$12,300 per employee. Sales per employee were \$266,000.

TYPES OF WHOLESALE

Of the numerous kinds of wholesale business, those involved with machinery, equipment, and supplies outnumbered all others, with 1,056 establishments, 23 percent of all wholesale firms. Establishments dealing with motor vehicles, automotive parts and supplies, and grocer-

ies each accounted for 11 percent of the total. Other kinds of wholesale business include furniture, lumber and other construction materials, electrical goods, hardware, paper products, chemicals, and petroleum products.

SHARE OF SALES

Grocery wholesalers produced the largest share of the industry's sales, 23 percent (\$3.2 billion); machinery and equipment wholesalers generated 13 percent; and those handling petroleum products contributed 12 percent.

Wholesalers of chemicals experienced the largest sales increase between 1977 and 1982, 435 percent. Sales of those firms dealing with drugs and druggists' sundries rose 230 percent. In contrast, sales of farm product wholesalers were unchanged.

— Tom R. Rex
Research Manager

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new record in 1984. Signs of market saturation are increasing, such as more use of rental concessions and vacancy rates that are higher than the norm. Hence, multifamily activity is expected to decline during 1985, to 15,000 units in Maricopa County, which would be the third best year on record, and to 5,000 units for the rest of Arizona. If actual results should exceed the forecast, the predominant reasons are likely to be continued availability of financing and developer building decisions that are based more on potential, long-term demand than on actual, current demand.

In response to increasing concerns about overbuilding, the office building market is expected to decline slightly in Maricopa County to around \$300 million. The retail sector should continue to grow, due to increased retail sales and the need for more retail space in the newer residential areas. The industrial sector is expected to continue expanding, due to continued economic growth.

In January 1985, Phoenix Magazine, Inc., and the Arizona Real Estate Institute at ASU again surveyed the representatives of four real estate groups in Maricopa County: homebuilders, financial services (banks, savings and loan associations, and

mortgage bankers), real estate brokerages (residential and commercial), and "other" entities (appraisal, development, and property management firms, and government). In the 1984 survey, more than 60 percent of the respondents believed that economic conditions would improve, while fewer than 5 percent foresaw worsening conditions for 1984. Although respondents to the 1985 survey had lower expectations, a majority foresee economic conditions remaining similar to those achieved in 1984. However, a large number (15 percent) believe the economy could worsen during the year.

As presented in Table 2, the consensus outlook is for stability, in that expected levels do not differ significantly from current levels. The relative closeness of the mode (most common value) to the median (value of the middle item in an ordered range) tends to demonstrate a fairly consistent and narrow range of responses.

As with the set of expectations, the expressed level of confidence is lower than it was a year ago. More than 80 percent of the 1984 survey group were confident that the local economy, new home market, and their firm's activity would improve. In the current survey, the expressed level of confidence that these areas would

improve is: 61 percent for the new home market, 78 percent for their firm's activity, and 68 percent for the local economy.

The main concern is still the level of mortgage interest rates; only 40 percent of the surveyed group expressed confidence that the rates will decline. In last year's survey, 63 percent of the respondents voiced confidence that the federal government's economic policy would lead to an improved economy, as compared to 53 percent in the current survey.

The respondents expect prices to increase at levels similar to those in 1984. For example, resale home prices are predicted to increase 5 percent; apartment rents are expected to rise 5 percent, and a 10 percent increase in land prices is forecast.

The respondents to the 1985 survey are not as optimistic as participants in the 1984 survey. However, they do foresee a year similar to 1984. Given the strong level of market activity in 1984, expectations for stability would call for another good year of real estate activity in 1985.

— Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate in the College of Business, Arizona State University. He also serves as Director of the Arizona Real Estate Institute.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-To-Date Value	Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	41.738	8.9	12.0	NA	NA
Arizona - 1972 Dollars	3rd Qtr.	20.193	9.8	11.2	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	4th Qtr.	184.4	0.7	5.9	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Jan.	121.5	0.5	0.5	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Dec.	258,125	- 6	- 12	3,810,881	82
Pima County	Dec.	84,908	16	107	774,418	22
Balance of State	Dec.	44,800	-51	- 5	676,598	32
Arizona	Dec.	385,831	-13	- 1	5,261,887	44
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Dec.	3,229	5	-40	59,915	26
Pima County	Dec.	915	30	71	15,379	2
Balance of State	Dec.	887	-12	1	13,340	5
Arizona	Dec.	5,031	5	-26	88,634	17
HOME SALES						
Maricopa County - Number	Jan.	3,173	-35	-37	3,173	-37
Maricopa County - Median Price	Jan.	72,750	0.1	4.1	72,750	4.1
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Jan.	2,751.8	2.4	9.6	2,751.8	9.6

NA = Not Applicable

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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East Valley Winter Migration Up 6 Percent in '85

The winter migration of retired and semi-retired people to the warmer climate of the South and the Southwest is a phenomenon of growing social importance. The economies of many Sunbelt communities depend heavily on the monies spent by these winter residents. At the same time, seasonal population inflows often create planning problems for local governments and agencies that provide highways, water, health care, and other public services.

In 1980, for the first time, the U.S. Census Bureau provided information on seasonal migration by compiling counts of non-permanent residents; these figures show that four Sunbelt states — Florida, California, Arizona, and Texas — were the destination of the largest number of migrants. Of the estimated 300,586 non-permanent U.S. households on April 1, 1980, a date that is past the prime winter period, 21,286 (7 percent) were found in Arizona, ranking the state third behind Florida (132,257) and California (23,392). These data also clearly indicate two primary patterns of seasonal migration: from the Northeast and the Mideast regions to

Florida and from the northern-tier states (those on the Pacific coast to those on the Great Lakes) to the Southwest.¹

The Phoenix metropolitan area is one of the major seasonal homes for these winter residents, many of whom locate in Scottsdale, the Sun City/Youngtown area, or other parts of the West Valley. However, the

See "Winter Migrant," page 2

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Arizona's "Four Cs" Decline

Historically, the Arizona economy has been described as the "four Cs": copper, cattle, cotton and citrus. While it is widely acknowledged that other industries have gained significance recently, especially high technology manufacturing and tourism-oriented services, many still consider the old mainstays of the Arizona economy to be important.

In order to determine which characterization of the Arizona economy is accurate, a consistent set of data available over a long time period is needed. Of the best measures of the Arizona economy — Gross State

Product (GSP), employment, and personal income (PI) — only the latter is available by industry for many years (since 1929, from the U.S. Department of Commerce).

THE ARIZONA ECONOMY IN 1929

The four Cs characterization of the Arizona economy was relatively accurate in 1929, according to PI data. The agriculture and mining industries together contributed nearly one-third

See "Four Cs," page 4



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"Winter Migrant," from page 1
most popular haven for winter residents is the East Valley, particularly the Mesa and Apache Junction areas. The growing volume of winter visitors to the East Valley each year is clearly evidenced by the proliferation in the Apache Trail corridor of travel trailer, recreational vehicle (RV), and mobile home parks, shopping centers, restaurants, and other businesses that cater to seasonal residents.

THE 1984 CENSUS

While many people are interested in the number and characteristics of the Valley's winter residents, little data on them has been available. The expressed need for such information, plus uncertainty concerning the number of non-permanent residents each winter, led the authors to undertake a census during February 1984 of mobile home, travel trailer and RV parks in that part of the Valley with the largest concentration of winter residents: the Mesa/Apache Junction area. Given the limited resources available, this initial survey sought information about the volume of winter visitors but did not attempt to enumerate all winter residents. Those staying in motels, hotels, apartments, houses, with friends or relatives, or camping on public lands were not contacted. Thus, the estimates produced by last year's study should be interpreted as a measure of the most visible segment of the entire population of winter residents, rather than as an estimate of the total volume of winter visitors.

For the census, a list of 236 mobile home, travel trailer, and RV parks located in the Mesa/Apache Junction area was compiled, and the owners or managers of the parks were surveyed by telephone to ascertain data relating to the number of spaces, occupancy levels, and proportion of winter residents, along with certain other characteristics of the parks. Based on this information, it was estimated that 27,500 winter resident households or, assuming an average of two people per household, 55,000 people were living in the Mesa/Apache Junction area parks during the first week of February 1984.²

1985 CENSUS METHODOLOGY

Last year's survey of mobile home, travel trailer, and RV parks was the

first in a series of annual studies that will provide a continuing source of information on the Valley's winter resident population. Thus, the census was conducted again during the first week of February 1985. For consistency, similar survey procedures were used, but the survey area was expanded to include parks in Chandler, Gilbert, Scottsdale, Tempe, and the non-incorporated areas of eastern Maricopa County.

Starting with the list of parks from the 1984 census, an expanded list was compiled of parks located in the newly added areas, together with additional parks located in the original survey area. Researchers used a variety of sources: directories of mobile home, travel trailer, and RV park associations; the list compiled by Mountain West Research for the *Phoenix Metropolitan Housing Study*; and city and county officials. The number of parks included in the 1985 survey totaled 318.

Members of the survey team again attempted to telephone the owner/manager of each park; in a few cases, a personal visit to the park was necessary. Some of the owners/managers declined to be surveyed; some parks had no current telephone listing; and others could not be contacted after repeated attempts. The overall response rate for the 1985 survey was 85 percent.

For non-responding parks, counts of the number of spaces were drawn from directories, the Mountain West listing, or site visits. Information from the responding parks was employed to estimate occupancy rates and the proportion of winter residents for the non-respondents. This estimation procedure was based on stratification by geographical area, age of park, and type of park. The survey data were then used to estimate the number of winter visitors residing in mobile home, travel trailer, and RV parks in the East Valley during the first week of February 1985.

1985 CENSUS RESULTS

A summary of the 1985 census results is presented in Table 1. The 318 parks included in the survey were found to have a total of 29,629 travel trailer and RV spaces and 30,448 mobile home spaces — a combined total of more than 60,000 spaces in the East Valley area. The proportion of spaces occupied at the time of the survey was considerably

higher in mobile home parks (an overall occupancy rate of 90 percent) than in travel trailer and RV parks (77 percent). While many of the travel trailer and RV parks were filled to capacity, the average occupancy rate for the entire group was the result of the low occupancy rates in several large new parks that opened for business during the 1984-85 winter season.

Based on information collected from each responding park concerning the proportion of spaces occupied by winter visitors, it is estimated that 67 percent were seasonal rather than year-round residents. With an estimated total of 50,361 occupied spaces, this proportion implies that there were almost 34,000 winter resident households in East Valley mobile home, travel trailer, and RV parks during the first week of February 1985. Information from previous studies³ indicates that the average size for such households is nearly two people, resulting in an estimated population of 68,000 winter residents. Since some winter visitors spend only part of the season in the East Valley, then move on to other areas, the total headcount for the entire 1984-85 winter season must be substantially more than 68,000.

Geographical Breakdown

To provide a somewhat more detailed analysis in the 1984 survey, the entire Mesa/Apache Junction area was split into three subareas on the basis of major north-south streets and/or other divisions: *Area I* — Price Road to Power Road/Bush Highway; *Area II* — Power Road/Bush Highway to Meridian Road; *Area III* — Pinal County — Meridian Road to Mountain View Road. These same three subdivisions were retained for the 1985 analysis, with the newly added territories (Chandler, Gilbert, Scottsdale, Tempe, and the non-incorporated areas of eastern Maricopa County) grouped together and designated *Area IV*.

Based on these geographical divisions, the largest number of winter visitors was the 17,500 households of *Area I*. The parks in *Areas II* and *III* also served as temporary homes to large numbers of winter resident households — 6,100 and 7,300 respectively. A clear indication of the popularity of the parks in the Mesa/Apache Junction area is the fact that more than 70 percent of their spaces

TABLE 1
WINTER RESIDENTS IN EAST VALLEY MOBILE HOME, TRAVEL TRAILER, AND RV PARKS
By Geographic Area, February 1985

	Area I	Area II	Area III	Area IV	Total
Number of Mobile Home Spaces	13,060	6,030	4,028	7,330	30,448
Occupancy Rate (percent)	90	80	89	99	90
Number of Travel Trailer and RV Spaces	12,847	7,944	7,792	1,046	29,629
Occupancy Rate (percent)	96	36	72	99	77
Number of Occupied Spaces	24,118	8,643	9,283	8,317	50,361
Percentage of Spaces Occupied by Winter Residents	73	71	78	26	67
Number of Winter Resident Households	17,521	6,137	7,274	3,019	33,951

Source: Census conducted by the authors, February 1985.

were occupied by winter residents during the February survey period. The concentration of seasonal residents in the mobile home, travel trailer, and RV parks of Area III was particularly apparent, with nearly 80 percent of the spaces occupied by winter visitors. The 1985 survey revealed that both the number and concentration of winter residents was much lower in Area IV parks. Only 26 percent of the residents were identified as winter visitors — about 3,000 households.

Arrival Time and Number of Visitors

The survey also asked park owners/managers their impressions concerning the arrival time and number of winter residents this season, compared with winter, 1984. Opinion seemed split on arrival time: 24 percent thought their customers generally arrived earlier this year, while 51 percent detected no change, and 25 percent felt that their parks filled later this season, compared with last year. The opinion that the winter residents arrived later this year was most often voiced (33 percent of respondents) by owners/managers of parks in Area III. The reason most frequently offered for later arrivals was the fact that many people waited until after the elections in November before traveling to their seasonal residence in the East Valley area. Those owners/managers who felt their customers arrived earlier cited bad weather in the winter residents' "home" states as the primary factor.

Of all responding owners/managers, 30 percent felt that more winter visitors resided in their park this year, compared with last year; most said the reason was better economic conditions. At the same time, 62 percent perceived no numerical change this year, observing that their parks

TABLE 2
NUMBER OF PARK SPACES AND WINTER RESIDENT HOUSEHOLDS
Geographic Areas I, II, and III Only

	1984	1985*	Percent Increase
Number of Mobile Home Spaces	19,716	21,783	10
Number of Travel Trailer and RV Spaces	18,557	27,279	47
Number of Occupied Spaces	36,199	40,056	11
Number of Winter Resident Households	27,447	29,202	6

*The 1985 comparative figures are not consistent with the data for Areas I, II, and III in Table 1 because they pertain only to existing parks included in both years' surveys and to parks opened during 1984 or 1985.

Source: Census conducted by the authors, February 1985.

were always full, and/or that the winter residents own their own park spaces. When questioned about the relative volume of winter residents in the entire East Valley, most of the owners/managers perceived growth in the overall number of winter residents: 72 percent answered that there were more visitors than last year; 15 percent felt overall volume had not changed; and only 13 percent said that fewer visitors arrived.

COMPARISONS WITH 1984 SURVEY RESULTS

With the addition of new territory to the survey area, the 1985 estimates cannot be directly compared with the results of the 1984 survey. However, a summary of the results from both the 1984 and 1985 surveys for Areas I, II and III (where most of the winter visitors reside) is presented in Table 2. These statistics clearly show that substantial growth has occurred during the past year, the expansion being particularly evident in the number of spaces available in travel trailer and RV parks. The total number within Areas I, II and III grew almost 50 percent between 1984 and 1985. In addition, the number of spaces in

mobile home parks grew 10 percent. A major part of the expansion took place within survey Area II, where the number of travel trailer and RV spaces jumped from 1,200 in 1984 to 6,800 in 1985.

Because of this large increase in the supply of spaces, many new parks experienced low occupancy rates during the 1984-85 season. On balance, the increase in spaces, combined with somewhat lower occupancy rates overall and a greater number of year-round residents in many parks, produced a 6 percent rise in the number of winter resident households in the mobile home, travel trailer, and RV parks of Areas I, II, and III between February 1984 and February 1985.

CONCLUSION

The results of this year's census again emphasize the importance to the local economy of the phenomenon of seasonal migration — an addition of nearly 70,000 people to the Phoenix area, if only the winter residents of East Valley mobile home, travel trailer, and RV parks are counted. The 1985 figures also point

to the large expansion in the supply of park spaces, which will accommodate an even greater number of winter visitors. Current construction and planning of additional parks in the East Valley area imply that such expansion will continue in future years.

Although not included as part of this census, mobile home, travel trailer, and RV parks under construction in the western Valley also appeal to the winter resident and should be noted. *The Phoenix Metropolitan Housing Study*, Fourth Quarter, 1984,⁴ identified almost 2,000 spaces in travel trailer and RV parks located in West Valley communities. More than 1,400 of these spaces were located in parks built during 1984, and the number is likely to grow further during the next few years. The low occupancy rates experienced by some of the new parks during the 1984-85 winter season indicate that the expansion of capacity may exceed demand in the short run, but the growing retired and semi-retired population of the United

States can be expected to sustain the growth in the number of seasonal migrants to the East Valley and other parts of Arizona.

— **Jacqueline Fifield**
Research Analyst

— **Stephen K. Happel**
Timothy D. Hogan
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The authors gratefully acknowledge the cooperation of the park owners/managers who responded to the February survey; Mountain West Research, for providing listings of the mobile home, travel trailer, and RV parks in Maricopa County; and the planning departments of Maricopa County and the cities of Apache Junction, Chandler, Gilbert, Mesa, and Tempe. In addition, they appre-

ciate the efforts of Mark Harrington, Linda Lee, Bill Sobbing, Paul Umbriano, and Todd Wert, who spent many hours conducting the telephone survey.

¹U.S. Bureau of the Census, "Non-permanent Residents by States and Selected Counties and Incorporated Places: 1980," *Census of Population, 1980*, Supplementary Report PC80-S1-6 (April 1982).

²Stephen K. Happel, Timothy D. Hogan, Deborah Sullivan, Heidi Rowe, and Laura Smith, "Mobile Home and Travel Trailer Parks in the East Valley: A Census," *Arizona Business* (Second Quarter, 1984): 13-18.

³U.S. Bureau of the Census, "Non-permanent Residents by States and Selected Counties and Incorporated Places;" and Stephen K. Happel, Timothy D. Hogan, and Deborah Sullivan, "The Social and Economic Impact of Phoenix Area Winter Residents," *Arizona Business* (First Quarter, 1983): 3-10.

⁴Mountain West Research — Southwest Inc., *Phoenix Metropolitan Housing Study* (Fourth Quarter, 1984): 52.

"Four Cs," from page 1

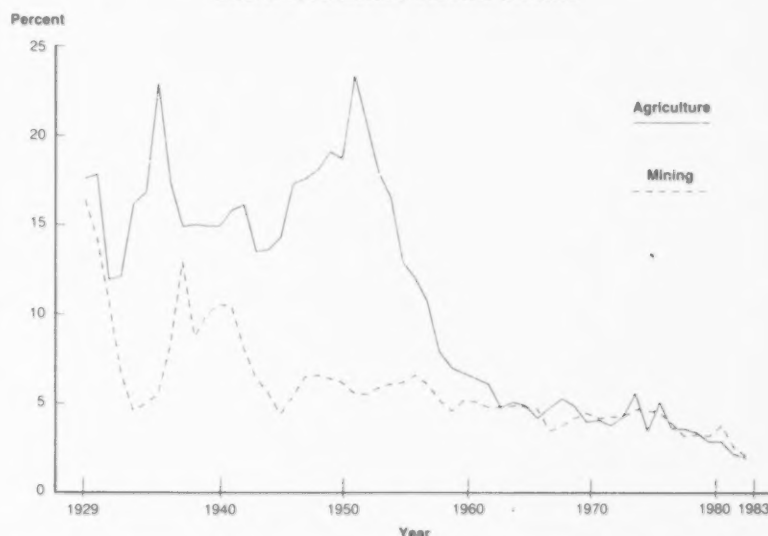
of the state's personal income. Even then, however, the PI derived from the services and trade industries was nearly as much as that from agriculture and mining.

In comparison to the 1929 national economy, in which manufacturing was the most important industry, mining and agriculture were much more significant to the Arizona economy. The services and trade industries, however, were no more important to the Arizona economy than to the national economy. Thus, the four Cs did fairly describe the Arizona economy in 1929, particularly in comparison to the national economy.

DECLINE OF MINING AND AGRICULTURE

The Arizona mining industry has declined in significance since 1929 (see Figure I). Its share of PI fell to less than 7 percent in 1932 from more than 16 percent just three years earlier. Except preceding and during World War II, mining's share of PI remained at approximately 6 percent until it began a slow decline around 1960. Even during the copper boom of 1981, mining contributed less than 4 percent of Arizona's personal income; its contribution now is just 2 percent.

FIGURE I
THE DECLINE OF AGRICULTURE AND MINING
Share of Arizona Personal Income



Source: Bureau of Business and Economic Research, College of Business, Arizona State University

The mining industry had remained somewhat more important to the Arizona economy than to the national economy until 1983. Now, Arizona mining's share of Arizona PI is no greater than national mining's share of national PI.

The Arizona agriculture industry began to decline much later than the

mining industry. Its peak year was 1951, when agriculture contributed 23 percent of Arizona's personal income. The industry's portion has fallen since then, however, to less than 8 percent by 1958, and to 2 percent by 1983. Agriculture has not been more important to the Arizona economy than the national agriculture in-

dustry has been to the national economy since the early 1960s.

The actual output of mining and agriculture has not necessarily declined. Except for cyclical downswings, the inflation-adjusted GSP of both industries has increased. However, this growth has been much slower than that of Arizona's other industries. The explosive growth of the state's urbanized areas has overwhelmed these rural industries.

In some parts of rural Arizona, mining and/or agriculture remain the dominant forces of the local economy. For these areas, such as portions of Gila, Graham, Greenlee, Pinal and Yuma counties, a slump in mining or agriculture can be devastating. Because their population is so small, however, these problems barely affect the state as a whole.

THE GROWTH INDUSTRIES

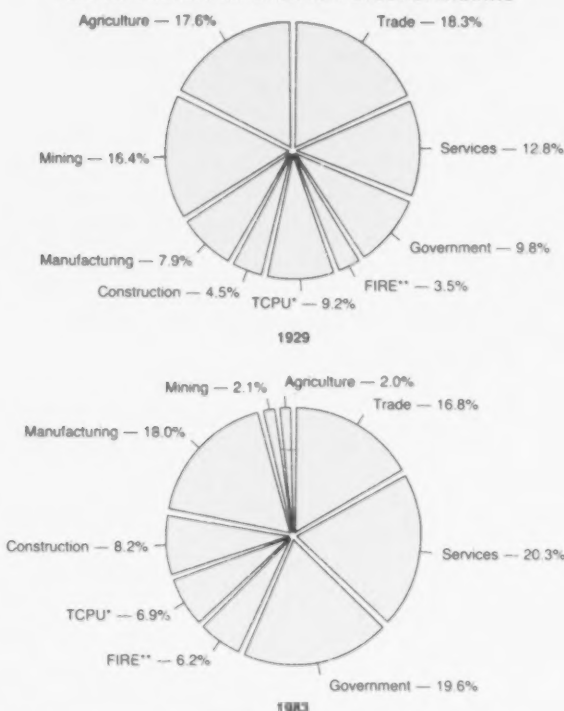
The agriculture and mining industries' combined share of Arizona personal income has declined from 32 percent in 1929 to 4 percent in 1983. Three industries in particular have grown to replace most of this lost share.

Government was the first to gain in importance, its share of PI rising from less than 10 percent in 1929 to more than 20 percent in 1932, a result of the Depression. During World War II, when military operations expanded in Arizona, government's share of PI briefly exceeded 33 percent. Since the early 1960s, government's portion of PI has remained near 20 percent; it contributed the largest percentage of Arizona's personal income each year from 1961 through 1982. (Government's share of GSP, however, was only 14 percent, ranking it as the fifth largest industry.) Compared to the contribution of government to national PI, the Arizona government's share of Arizona PI has been slightly higher.

During the 1950s, Arizona's manufacturing industry began to expand. Until 1951, it usually had accounted for less than 7 percent of Arizona personal income, while the national manufacturing industry contributed more than 25 percent of U.S. PI. By 1960, the PI derived from manufacturing was nearly 14 percent of the state's total, and by 1980, the industry had achieved an 18 percent share of PI, still not as large as the national share.

MAY 1985

FIGURE II
THE SHIFT IN ARIZONA'S INDUSTRIAL STRUCTURE
Sectoral Share of Arizona Personal Income



* TCPU = Transportation, Communications, and Public Utilities

** FIRE = Finance, Insurance, and Real Estate

Source: Bureau of Business and Economic Research, College of Business, Arizona State University

Arizona's services industry has also grown, but to a lesser extent. Excluding cyclical fluctuations, this industry accounted for approximately 18 percent of Arizona PI from 1929 through 1960, almost the same share it constituted nationally. Both in Arizona and nationally, services' share of PI has increased since 1960, especially during the last few years.

THE ARIZONA ECONOMY TODAY

Arizona now has a diversified economy, one much different than in 1929 (see Figure II). While manufacturing, especially that related to high technology, and services are the most rapidly growing industries, the government and trade sectors still contribute comparable shares of Arizona personal income. If GSP is used as the measurement base, the finance, insurance and real estate industry must be added to this group. The Arizona industrial structure is much like the national structure, except that manufacturing is a little less important in Arizona, while construction and government are slightly more significant.

CONCLUSION

It is simple but accurate to say that the four Cs (agriculture and mining) were important to Arizona in the past. Mining declined first, replaced by government. Agriculture declined more recently, replaced by manufacturing and, later, by services as well. Agriculture and mining seem doomed to continue their relative decline, although neither can fall much farther since each contributes only 2 percent of Arizona personal income. Their shares of employment and Gross State Product are similarly small.

These changes in the Arizona economy did not occur recently. By the mid-1960s, the economy's structure already closely resembled that of today. Recognition of these changes has been slow, however. The importance of the manufacturing and services industries has only recently been realized, while the problems of the mining and agriculture industries still garner considerable attention.

— Tom R. Rex
Research Manager

Home Ownership Remains a Dream for Many

Rising home ownership costs during the last few years have shattered the dream of owning a home for many Americans. A goal of most Americans since the early part of the 20th century, home ownership had been realized by nearly two-thirds of the population by 1979. This proportion has recently declined, however.

Reasons for owning a home have included numerous qualitative factors: privacy, a wholesome environment for children, and a place to entertain friends. Financially, owning has been considered advantageous to renting and, especially during the 1970s, owning was believed to be a good investment.

A recent study by the Bureau of Business and Economic Research examined the financial aspects of home ownership during the 1980s, compared to earlier periods. It is widely acknowledged that home ownership today is less affordable than it was during the 1970s. In fact, housing during the 1980s is relatively more costly than at any time since at least the 1930s. Two factors are most responsible for these problems: high mortgage interest rates and low housing appreciation rates. Relatively high home prices also contribute to housing's financial difficulties.

HOME PRICES

The phenomenon of rising home prices was not new to the 1970s; home prices have increased steadily since the late 1930s. Even on an inflation-adjusted basis, home prices have advanced, although most of this real growth occurred during the 1950s and the 1970s.

The increase in home prices was less than the gain in household incomes until the 1970s. Thus, the median home price to annual household income ratio declined from 2.9 in 1940 to 2.2 in 1970 (as a "rule of thumb," buyers were considered able to afford a home priced 2.5 times their annual income). After 1970, however, this ratio rose, peaking at 3.0 in 1978 and 1979, although it has since declined to 2.8 (see Figure 1). Thus, independent of mortgage interest rates, more income has been needed during the 1980s to buy a home than at any time between the mid-1940s and mid-1970s.

Household incomes have not kept pace with home prices since 1970, despite the increased frequency of dual-income households. Thus, the affordability problem is even more severe for the traditional single-income family.

MORTGAGE INTEREST RATES

Mortgage interest rates were remarkably stable from the 1930s through the mid-1960s: FHA rates ranged from just 4.5 percent to 5.5 percent. During this period, the inflation rate averaged between 1 percent and 2 percent; therefore, the real interest rates were usually between 3 percent and 4 percent.

While mortgage interest rates generally rose from the mid-1960s through 1980, the boosts did not keep pace with inflation. Thus, real interest rates fell from the historic 3 percent to 4 percent to negative rates during the mid and late 1970s (see Figure 1). These negative real interest rates were a primary contributor to the real estate boom of the 1970s.

In 1981, rising interest rates and falling inflation rates caused real interest rates to return to normal levels. A continued sharp decline in inflation accompanied by only

a slight reduction in interest rates created a never-before-experienced condition of nearly 10 percent real interest rates.

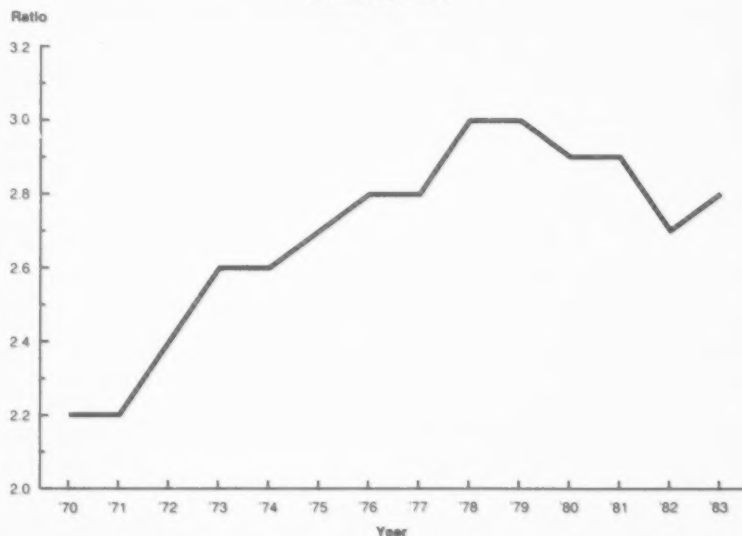
Real interest rates represent an added cost to the home owner, a cost that cannot be recouped if increases in home values do not also exceed the inflation rate.

MORTGAGE PAYMENTS

The monthly mortgage principal and interest payment has increased steadily, even on an inflation-adjusted basis. Until the late 1960s, the higher payments were due mostly to higher home prices. Since that time, both home prices and mortgage rates have contributed to the higher payments, compounding the effect on the buyer.

Until the mid-1970s, the typical mortgage payment usually required between 17 percent and 20 percent of monthly household income, though this proportion was slightly less from the late 1940s into the 1950s. After the early 1970s, this ratio steadily grew, reaching nearly 43 percent in 1981. The recent decline in mortgage rates, coupled with slightly lower real home prices, has lowered the ratio to 36 percent — still higher than in any year prior to

FIGURE 1
HOME PRICE-TO-INCOME RATIO
United States



Source: Bureau of Business and Economic Research, College of Business, Arizona State University

1980 (see Figure III).

Mortgage payments are nearly 90 percent higher now than they were 15 years ago, on an inflation-adjusted basis. If mortgage rates were currently set at their historic real level (a nominal rate of approximately 8 percent), the real principal and interest payment would be nearly equivalent to that of 15 years ago.

Thus, while housing affordability has declined since 1950, relatively

little deterioration occurred until the mid-1970s. Since the late 1970s, households earning the median income have not been able to afford the median priced home.

APPRECIATION OF HOME VALUES

While home values have risen at a rate exceeding inflation over the long term, this relationship has not been stable, occurring more during the

1950s and 1970s than in other years. In addition, even during a period of higher housing appreciation, the rate usually slows to less than the inflation rate during recessionary years. On an inflation-adjusted basis, even during the 1970s, the increase in housing prices was not unusually large except during 1973, 1976 and 1978. The sharp increases in home prices were partially a result of a high underlying inflation rate.

Generally, the total amount paid for principal and interest has only slightly exceeded the appreciation in the home's value. Thus, home payments usually can be viewed as a form of savings; the only true expenses are those related to buying and selling the home. During the 1970s, with negative real interest rates and rapidly appreciating home values, even the buying and selling expenses could be recouped.

If housing appreciation is relatively slow, however — that is, near the inflation rate, as during the 1960s and 1980s — the increase in the home's value does not equal the mortgage costs. If the real interest rates are usually high, as during the 1980s, the mortgage costs are even higher. Thus, housing has been relatively expensive during the 1980s because of high interest costs and little prospect of appreciation in value (see the Third Quarter 1984 and March 1985 issues of *Arizona Business* for more information on appreciation).

IMPLICATIONS

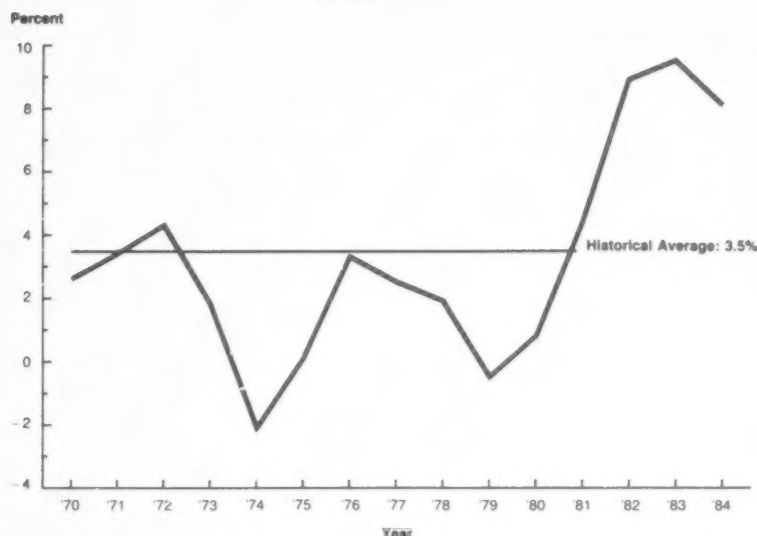
A dramatic shift in the economics of home ownership occurred between the late 1970s and early 1980s, due to a swing from negative real interest rates to record high real rates and to a swing from housing appreciation in excess of the inflation rate to a rate barely keeping pace with inflation. During the 1970s, investment in housing was the most profitable it has ever been in the United States; currently, housing investment is the least profitable since at least the 1930s. Thus, housing's issues go beyond the affordability problem that is preventing people from realizing their goal of home ownership. Even those who qualify for a home face the prospect of relatively high costs and relatively low returns.

Since financial considerations represent only a few of the many

See "Home Costs," page 10

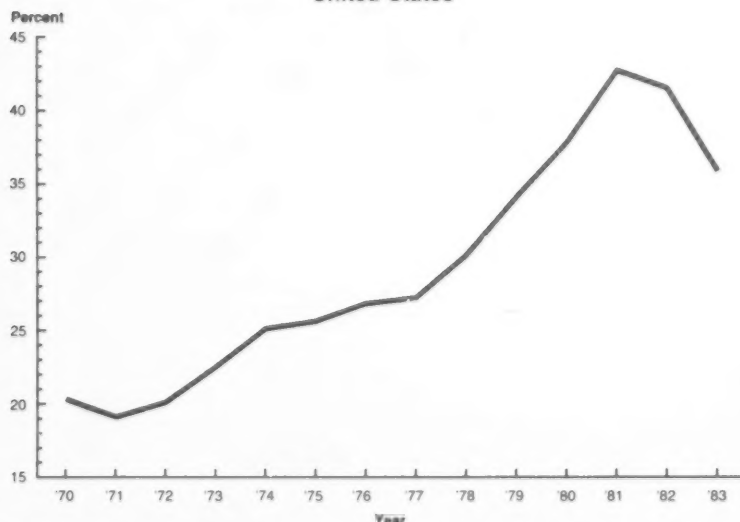
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FIGURE II
REAL MORTGAGE INTEREST RATES
United States



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE III
MORTGAGE PAYMENT-TO-INCOME RATIO
United States



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

More Large Homes Sold During '84

Larger homes, with more amenities, sold in greater numbers during 1984 than during 1983 in the Phoenix area, partially explaining a 6 percent rise in the median sales price. The 1984 median sales price of \$73,000 for single family homes was significantly higher than the 1983 figure, \$68,650, but homes that sold during 1984 also had significantly more living space, bathrooms, garages and swimming pools than homes that sold during 1983.

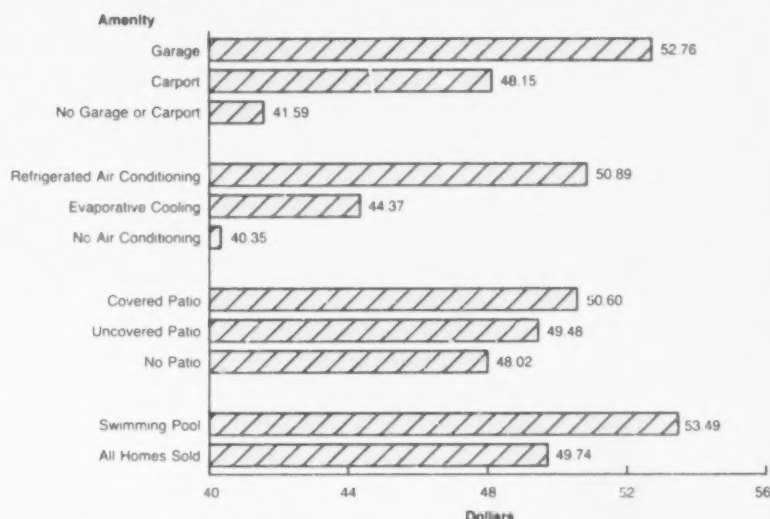
The median size of single family homes sold during 1984 was 1,442 square feet. Larger homes are more likely than smaller homes to include amenities such as garages, swimming pools, refrigerated air conditioning, and additional bathrooms. These amenities add value to a home, apart from the value derived from greater square footage.

AMENITIES—VALUE ADDED

Homes with a garage, 41 percent of all homes sold during 1984, had a median price per square foot of \$52.76, 6 percent more than the median square foot price of all homes sold (see Figure 1). In contrast, homes with a carport, nearly one-half of all homes sold, had a median square foot price 3 percent less than the overall median. Homes with neither a carport nor a garage, 9 percent of all homes sold, had a square foot price 16 percent less than the overall median.

The most common bathroom arrangement, in 63 percent of the homes sold during 1984, was one full bathroom with an additional partial bathroom. The median price per square foot of homes with two or

FIGURE 1
MEDIAN SALES PRICE PER SQUARE FOOT BY TYPE OF AMENITY
Single Family Homes, Metropolitan Phoenix, 1984



Source: Bureau of Business and Economic Research, College of Business, Arizona State University

more full bathrooms was approximately 13 percent more than the overall median; these homes represented 18 percent of all sales.

More than three-fourths of the homes sold during 1984 were cooled by refrigeration. Homes with only evaporative cooling represented more than 20 percent of all sales; their median price per square foot was 11 percent less than the overall median. Despite the summer heat, homes without any cooling or with just a window unit still exist in the Phoenix area. They totaled 1 percent of all sales and had a median price per square foot 19 percent less than the overall median.

Two-thirds of all homes sold during 1984 had a covered porch or patio,

but this extra feature had little effect on a home's price per square foot. In contrast, the median price per square foot of a home with a swimming pool was 8 percent greater than the overall median.

The age of a home also had an impact on its price per square foot. For homes built prior to the mid-1970s, the price per square foot was approximately \$47 for homes sold during 1984. That figure gradually rises for homes constructed throughout the 1970s and 1980s, reaching \$56.76 per square foot for homes built in 1983. Older homes typically have fewer amenities than newer homes.

— Tom R. Rex
Research Manager

Valley Inflation Rate Remains Near 6 Percent

Prices of goods and services in the Phoenix metropolitan area rose 1.8 percent during the first quarter, an increase comparable to that of most recent quarters (see Table 1). The first quarter 1985 index, 187.8 on a 1977 = 100 base, is 5.9 percent higher than it was one year ago.

COMPONENT INDEXES

The 1.8 percent first quarter increase resulted from advances throughout the index. A 2.6 percent rise in the index for food and beverage

was the greatest since 1980, although the first quarter increase is usually the largest in any year. The 4.6 percent jump in the entertainment index was also the largest since 1980 and partially due to seasonal factors.

Food and Beverages

The advance was led by a 3.3 percent boost in the food at home category; increases for food away from home and alcoholic beverages were much smaller. Within the grocery

Metro Phoenix CPI

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Bureau of Business and Economic Research in the College of Business, Arizona State University. Comprehensive pricing surveys are conducted each quarter by the Bureau in cosponsorship with Valley National Bank.

component, four of five subcategories posted a gain between 3 percent and 4 percent: cereal and bakery products; meats, poultry, fish, and eggs; fruits and vegetables; and other food at home (see Table 2). Prices of pork, eggs, and fresh fruits rose the most.

Housing

The housing index increased modestly, as both renters' and homeowners' costs advanced moderately. Prices for household furnishings and operations inflated 2.8 percent, but the cost of fuel and other utilities declined.

Transportation

The first quarter rise in the transportation category resulted primarily from the largest jump in new car prices since 1978. In contrast, used car prices dropped slightly, after four years of generally large gains, although they were still 12.7 percent higher than those of one year before. Gasoline prices were nearly unchanged from the prior quarter and only 1.9 percent greater than those of first quarter, 1984.

Medical Care

The first quarter advance in the medical care index was more broadly based than in prior quarters, as four of the five subcategories recorded a gain between 3 percent and 4.2 percent: health insurance, professional services, prescription drugs, and non-prescription drugs and medical supplies. Hospital costs once again did not change; they have risen only 0.8 percent from their level one year earlier.

Other Categories

Apparel and upkeep costs increased a relatively large 2.2 percent, due to gains in excess of 6 percent for apparel services, men's apparel and women's apparel. A large jump in the entertainment category was due to higher prices for sporting goods and equipment, toys and hobbies, and admission fees. The other goods and services category again rose modestly.

COMPARISON AREAS

The first quarter inflation rate in the Phoenix area was greater than the national average in all categories (see Table 3). The change from one year before was also larger in the Phoenix area in all categories except apparel and upkeep and other goods

and services. In addition, the Valley's inflation rate was higher than in Denver or San Diego.

OUTLOOK

The Phoenix area's inflation rate

remains stable, at an annual rate between 5.5 percent and 6 percent; this stability is expected to continue throughout 1985. The Valley's rate of inflation continues to greatly exceed

See "CPI," page 12

TABLE 1
PERCENT CHANGES
IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

Expenditure Category	Relative Importance	Percent Change from Preceding Quarter				
		1st 1984	2nd 1984	3rd 1984	4th 1984	1st 1985
ALL ITEMS	100.0	1.9	1.5	1.7	0.7	1.8
Food and Beverages	19.0	1.8	0.7	1.0	0.2	2.6
Housing	38.9	0.6	2.0	2.3	-0.1	1.2
Apparel and Upkeep	4.8	2.5	-1.3	-0.1	0.4	2.2
Transportation	21.9	1.6	2.3	1.2	2.2	1.7
Medical Care	6.6	11.4	1.1	3.0	2.7	3.4
Entertainment	4.6	1.1	2.3	2.6	0.3	4.6
Other Goods and Services	4.2	0.8	1.1	2.1	1.2	1.4

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
First Quarter, 1985
(1977 = 100)

Expenditure Category	Last Qtr. Index	This Qtr. Index	Percent Change	Year-Ago Change
ALL ITEMS	184.4	187.8	1.8	5.9
Food and Beverages	166.0	170.3	2.6	4.5
Food	166.6	171.2	2.7	4.7
Food at Home	164.1	169.5	3.3	4.7
Cereal and Bakery Products	177.7	183.3	3.1	8.4
Meats, Poultry, Fish, and Eggs	156.0	161.8	3.7	2.8
Dairy Products	156.2	158.6	1.6	3.5
Fruits and Vegetables	176.0	182.5	3.7	6.8
Other Food at Home	152.2	157.4	3.4	4.1
Food Away from Home	168.8	171.8	1.8	4.8
Housing	192.8	195.0	1.2	5.4
Shelter	206.6	209.2	1.2	5.4
Renters' Costs**	112.1	112.9	0.7	6.3
Homeowners' Costs**	104.0	105.1	1.0	4.3
Fuel and Other Utilities	168.4	166.5	-1.1	4.3
Gas (piped) & Electricity	183.7	180.4	-1.8	5.4
Household Furnishings & Operations	147.2	151.3	2.8	6.0
Apparel and Upkeep	140.4	143.4	2.2	1.1
Transportation	183.6	186.7	1.7	7.7
Private Transportation	179.7	183.3	2.0	7.6
New and Used Cars	192.7	200.0	3.8	12.1
Motor Fuels	192.6	193.5	0.5	1.9
Public Transportation	247.6	242.4	-2.1	7.9
Medical Care	240.1	245.2	3.4	10.6
Entertainment	172.2	180.1	4.6	10.1
Other Goods and Services	166.2	168.5	1.4	6.0

An ** indicates that the base period is second quarter, 1983.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
First Quarter, 1985

Expenditure Category	Percent Change from Last Quarter		Percent Change from One Year Ago			
	Phoenix	United States	Phoenix	United States	Denver	San Diego
ALL ITEMS	1.8	0.7	5.9	3.5	2.2	5.0
Food and Beverages	2.6	1.7	4.5	2.5	2.1	2.5
Housing	1.2	0.8	5.4	3.8	2.7	7.1
Apparel and Upkeep	2.2	-1.7	1.1	2.9	1.8	3.3
Transportation	1.7	-5.7	7.7	2.8	0.5	4.2
Medical Care	3.4	1.6	10.6	5.5	6.5	2.5
Entertainment	4.6	0.9	10.1	3.9	-1.8	3.4
Other Goods and Services	1.4	1.3	6.0	6.3	5.2	8.9

Source (Tables 1, 2 and 3): Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data in Table 3 is from the U.S. Department of Labor, Bureau of Labor Statistics.

Purchasing Advances Continue in March

In March, the Arizona economy continued to consolidate the advances that began in January. For the third month in a row, all indicators were on the positive side, with new orders received and production showing strength. The inflation rate declined even further.

The first quarter economic results were increasingly positive. Further advances can be expected during the next quarter, although the growth rate will be moderate — typical in the third year of an economic expansion. Price pressures will continue well under control, which should enable the expansion to extend through the balance of the year.

Table 1 presents the results of the March survey of Arizona purchasing managers.

PRICES

Prices paid for major purchased items went up again in March, but at approximately half February's rate. The inflation rate began to moderate dramatically in July 1984 and registered only relatively small price hikes during the past six months. The increase rate has dropped in each of the three months of 1985. With the continuing strength of the dollar against almost all foreign currencies, encouraging lower-priced imports, and excess production capacity still available, the Arizona economy should continue to enjoy relatively stable prices through at least the third quarter.

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity—higher, unchanged, or lower—of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
MARCH PURCHASING SURVEY

Key Indicators	Percent of Purchasing Managers Indicating Each Response (March compared to February)		
	Higher	Same	Lower
Prices paid for major commodities	28	55	17
Delivery time from vendors	19	63	18
Purchased materials inventory level	27	49	24
New orders received	41	42	17
Production	38	53	9
Employment	27	57	16
Purchases	41	41	18

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

DELIVERY TIME/INVENTORIES

Delivery time on shipments from vendors did not change in March. Evidently, vendor backlogs had not changed from their February level.

Inventory levels of purchased materials were also essentially unchanged during March. This marks the ninth consecutive month of constant inventories and is typical for an economy on a relatively stable growth curve. Inventory additions are not stimulating economic growth, nor is an inventory overhang threatening continuation of that growth.

NEW ORDERS/PRODUCTION

New orders received by Arizona firms continued to increase nicely, following a strong upward thrust in February. The February and March new order increases both were larger than in any month since July 1984. This shows that the growth rate of the Arizona economy is continuing to accelerate, exhibiting a good deal of underlying strength.

Production of Arizona firms mirrored

the new order increase. Both the February and March production hikes were larger than in any month since May 1984.

EMPLOYMENT/PURCHASES

Employment continued to grow in March, at about the same rate as in February. The March increase rate was the largest since September's rate. The expanding employment trend of the first three months of 1985 should continue, due to the increase in both new orders and production.

Purchases of materials and supplies by Arizona firms rose at the same rate as in February. The increased dollars being spent with vendors is having a stimulative effect on the Arizona economy.

— Harold Fearon

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

"Home Costs," from page 7

reasons for buying a home, and because creative financing lowers the cost of home ownership, the home market remains relatively strong during the 1980s. The strength of the market may also be due to those unaware of the extent of housing's problems and to those who expect conditions to change soon.

While current housing conditions are unlikely to persist indefinitely, they have lasted for nearly five years. The near-term prospect for much lower real interest rates or much higher real appreciation of

housing values is dim. Because of the affordability problems and the high home price-to-income ratio, home values are not likely to rise at a rate much beyond the inflation rate. While real mortgage interest rates may decline slightly, they probably will remain at relatively high levels, due to the federal deficit, fears of inflation, and the existing equilibrium between supply and demand for loans. Even when conditions do change, it is unlikely they will approach those of the 1970s.

— Tom R. Rex
Research Manager

AZ Leading Index Surges Again in February

The Arizona Index of Leading Economic Indicators rose 0.6 percent in February, the second consecutive strong gain, following a year of erratic monthly changes (Figure 1). The index reached a record-high of 122.3 in February, up from a revised index of 121.6 in January (1977 = 100).

Although only four index components rose in February, the diffusion index (the proportion of increasing components to decreasing components, which considers an unchanged component to be one-half increasing and one-half decreasing) reached 55 percent, its highest value since January 1984. Preceding and during an economic expansion, the proportion usually exceeds 50 percent; preceding and during a period of contraction, the diffusion index generally registers 40 percent or less.

INDEX COMPONENTS

Once again in February, the greatest contributor to the index's gain was the national money supply (M2), which grew rapidly for the fourth consecutive month (see Table 1). In addition, the level of residential building permits rose for the sixth successive month, the February increase being the largest since mid-1983. Finally, the advance in average weekly hours worked in the manufacturing industry reversed a four-month decline.

Of the index components derived from a survey of the purchasing management associations of Arizona and southern Arizona, only new orders gained. Inventory levels fell, while the other three components did not change from their January levels. All five components had slowly declined for nearly one year.

Unemployment insurance claims rose in February, for the third straight month, a negative factor in the index. Prices of sensitive raw materials also dropped in February, another negative factor, following three consecutive months of increase.

OUTLOOK

Although firm conclusions cannot be drawn from the data of a brief, two-month period, the solid gains of January and February may provide an early signal of strengthening economic growth for upcoming months, from the state's slower growth since summer 1984. However, the Bu-

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS
TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

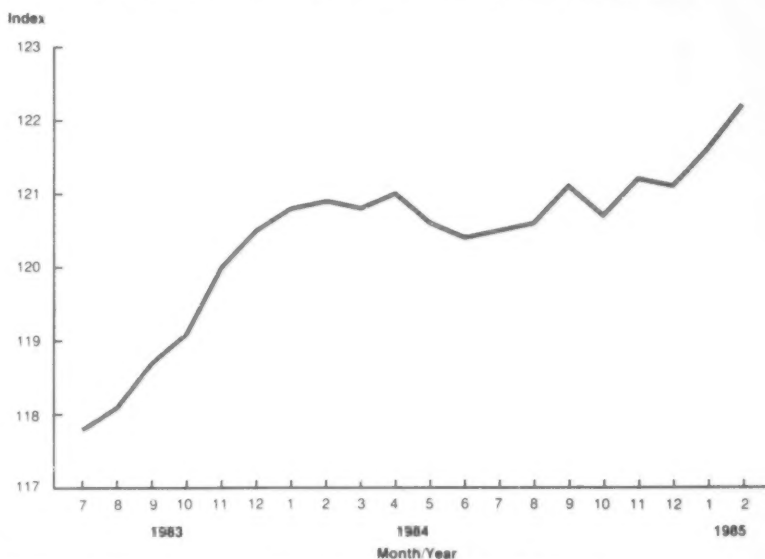
	Net Contribution ⁺		
	Dec. '84	Jan. '85	Feb. '85
Delivery Time*	-.01	-.02	.00
Inventory Levels*	.00	-.03	-.03
New Orders*	.03	-.02	.01
Production*	.04	.02	.00
Employment*	-.01	-.01	.00
Residential Building Permits	.01	.06	.12
Unemployment Insurance Claims	-.29	-.19	-.10
Average Workweek Manufacturing	-.56	-.16	.12
Money Supply	.57	.80	.67
Change in Sensitive Materials Prices	.13	-.04	-.08
OVERALL INDEX	-.09	.51	.70

⁺ The net contribution of each component is calculated by multiplying the monthly change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE 1
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

reau's forecast of oscillating growth throughout 1985 has not changed. Further, any improvement is likely to be uneven, affecting some industries more than others.

The national Index of Leading Economic Indicators has also experienced sizable gains during the last two months, following a period of inconsistent declines. Nevertheless, a longer period of steady advances is required to forecast the beginning of a new period of solid growth.

Looking ahead to the March Arizona index, the five components from the survey of purchasing managers are already available. Seasonally adjusted, they indicate a slight decline, reflecting an underlying weakness in the economy, despite improvement in the entire leading index.

— Luke Koons
Research Analyst

— Tom R. Rex
Research Manager

"CPI," from page 9

the national rate, which declined recently to approximately 3.5 percent. The national rate probably will accelerate back to the 4 percent to 4.5 percent range by late 1985.

In contrast to 1984, when rapidly rising health insurance premiums were responsible for one-half of the Valley's higher inflation rate, the variance between the Phoenix and national inflation rates is now due to

small increases in almost every component of the CPI. These generally higher prices are the result of a booming economy.

— Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	41.738	8.9	12.0	NA	NA
Arizona - 1972 Dollars	3rd Qtr.	20.193	9.6	11.2	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	1st Qtr.	187.8	1.8	5.9	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Feb.	122.3	0.6	1.2	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Jan.	351,471	37	25	351,471	25
Pima County	Jan.	58,810	- 9	3	58,810	3
Balance of State	Jan.	47,464	6	7	47,464	7
Arizona	Jan.	457,745	25	20	457,745	20
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Jan.	5,117	58	-10	5,117	-10
Pima County	Jan.	1,272	39	-29	1,272	-29
Balance of State	Jan.	1,099	24	-12	1,099	-12
Arizona	Jan.	7,488	48	-14	7,488	-14
HOME SALES						
Maricopa County - Number	Feb.	3,507	11	0	6,680	-21
Maricopa County - Median Price	Feb.	70,675	-2.9	2.4	71,650	3.1
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Feb.	2,507.8	8.7	-8.9	5,259.6	9.2

NA = Not Applicable

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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Astronomy Adds \$84 Million to Arizona Economy

As host to the largest collection of research-quality telescopes in the world (see Table 1), Arizona has benefited from astronomy's transition into big business. The value of construction activity required to build the observatories and the annual expenditures for their operation represent a substantial contribution to the local economy. To document the magnitude of this contribution, all astronomy-related agencies in Arizona were asked to provide information concerning employment, expenditures, and the value of physical plant and equipment during the 1982-83 fiscal year. Seventeen agencies supplied the requested data, and the results of this survey are summarized in Table 2.

In This Issue

- 5 April Purchasing Survey
- 6 1st Quarter Home Sales
- 7 AZ Leading Index, March
- 8 AZ Economic Indicators

DIRECT EXPENDITURES

Astronomical facilities provided jobs for 862 Arizonans during 1982-83, and their combined annual operating expenditures totaled \$34 million. About two-thirds of that total (\$21 million) paid personnel costs, including salaries; other costs of operation made up the remaining \$13 million. The Kitt Peak National Observatory is the largest facility

in the state, with 284 employees and annual operating expenditures of more than \$13 million.

Total value of astronomical facilities and equipment in Arizona was estimated at nearly \$300 million (in 1983 dollars). More than half of this total (\$158 million) comprises all facilities associated with the Kitt Peak National Observatory; in addition, the

See "Astronomy," page 2

GSP Growth Sets Record In '84

Despite slower growth during the fourth quarter, the Arizona Gross State Product (GSP) expanded at an inflation-adjusted 14.4 percent rate during 1984, surpassing the prior record of 12.1 percent during 1978. The record expansion during 1984 followed a 10.3 percent GSP rise during 1983, which was the third greatest in the 24 years for which GSP data are available.

Double-digit GSP gains had occurred during the first three quarters of 1984, including a sharply revised

increase of 12.1 percent during the third quarter (see Table 1). An inevitable deceleration of growth in the Arizona economy began during the fourth quarter, when the GSP, excluding the agriculture and mining industries, rose just 4.6 percent.

The economy's smaller fourth quarter gain was especially due to a slight decline in the GSP of the finance, insurance and real estate

See "1984 GSP," page 3



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"Astronomy," from page 1

Smithsonian Institution's Fred Lawrence Whipple Observatory and Multiple Mirror Telescope Observatory facilities on Mt. Hopkins are valued at \$50 million, and several other agencies reported physical plants worth more than \$10 million. Several agencies also reported planned expansions and/or new astronomical facilities that could potentially total more than \$110 million in value.

Taking all of Arizona's facilities together, the number of employees involved in astronomy is equivalent to the number of jobs provided by a large private sector employer, such as one of the top 20 high technology companies in the state. The annual operating expenditures of \$34 million in 1983 is equivalent to more than one-half of the total National Science Foundation budget for astronomy (\$62.5 million) for the same period.

TOTAL IMPACT

Although already sizable, the figures presented in Table 2 do not represent the full contribution of Arizona's observatories to the state's economy. Many of the facilities are used extensively by scientists from other parts of the nation and world. While in Arizona, non-resident scientists spend money for lodging, meals, and other expenses, estimated by the facilities to total \$975,000 during 1982-83.¹

These indirect expenditures plus the fact that almost \$30 million of the total \$34 million in annual operating expenditures is funded by out-of-state agencies (the National Science Foundation and NASA, for example) qualify Arizona's astronomical activities as a basic industry. Astronomy brings dollars into the state, which are spent within the local economy, providing revenues for local businesses and income for local residents. In turn, as these revenues are respent in Arizona, additional income and jobs are generated.

To estimate the total contribution of astronomy to the state's economy, these induced expenditures must also be taken into account. For example, the so-called "multiplier effect" for high technology industries in Arizona has been estimated to have a

¹This estimate was computed on the basis of \$30/day at astronomical sites, \$75/day for "in-town" activities, and \$1,000/month for longer-term visitors.

value of 2.4² (\$1 of direct spending by a high-tech firm ultimately generates additional spending of \$1.40 in other sectors of the economy), making the total economic impact of every dollar spent equal to \$2.40. Assuming the multiplier for astronomy is similar to such high-tech activities, astronomy's overall annual contribution to the state's economy in 1982-83 was \$83.9 million.

OUTLOOK

Modern astronomical research requires siting telescopes on high

²This multiplier value was taken from the publication, *High Technology in Arizona*, Arizona Office of Economic Planning and Development, 1984.

mountaintops in an area where a maximum number of cloudless nights prevail. The Southwest is the only area in the mainland United States, and one of only four areas in the world, that satisfies these requirements. Hence, a National Observatory and several other major astronomical facilities have been located in the mountains surrounding the Tucson urban area.

Interestingly, one of the major reasons that Kitt Peak was chosen in 1958 as the site for a National Observatory was the lack of background illumination in the night sky. At that time, it was believed that further growth in the Tucson area, 45 miles away, would not adversely affect Kitt Peak's celestial observations. How-

TABLE 1
MAJOR OBSERVATORIES IN ARIZONA

Observatory	Location
Kitt Peak National Observatory	Kitt Peak, southwest of Tucson
Lowell Observatory	Flagstaff
Multiple Mirror Telescope	Mt. Hopkins, southeast of Tucson
National Radio Astronomy Observatory	Kitt Peak
Steward Observatory	Facilities on Kitt Peak and Mt. Lemmon, northeast of Tucson
U.S. Naval Observatory	Flagstaff
Whipple Observatory	Mt. Hopkins

Source: *Astronomy and Communities: The Impact of Lighting Practices*, a research report by the authors, May 1985.

TABLE 2
ECONOMIC CONTRIBUTION
OF ASTRONOMICAL ACTIVITIES IN ARIZONA
1982-83

Number of Agencies ^a	17
Number of Employees	862
Total Direct Expenditures	\$33,895,000
Value of Physical Plant (1983 \$)	\$291,385,000
Value of Planned Projects (1983 \$) ^b	\$110,765,000
Visitor Expenditures ^c	\$975,000
Number of Tourists	215,000

^aThe 17 agencies in this survey (with their total fiscal year 1982-83 expenditures in millions of dollars): Kitt Peak National Observatory (\$13.2 million); U. of Arizona Optical Sciences Lab (\$5.3 million); U. of Arizona Steward Observatory (\$5.13 million); U. of Arizona Lunar and Planetary Lab (\$3.1 million); National Radio Astronomy Observatory (\$1.1 million); Whipple Observatory (\$1.05 million); Multiple Mirror Telescope Observatory (\$1.0 million); Lowell Observatory (\$0.93 million); U. of Arizona Physics Dept. (\$0.8 million); ASU Planetary Geology (\$0.54 million); U.S. Naval Observatory (\$0.53 million); U. of Arizona Flandreau Planetarium (\$0.37 million); Planetary Sciences Institute (\$0.35 million); ASU Astronomy (\$0.22 million); NAU Astronomy (\$0.15 million); McGraw-Hill Observatory (\$0.11 million); ASU Planetarium (\$0.03 million).

^bIncludes the projected cost of National New Technology Telescope. Mt. Graham in Arizona is one of two sites being considered.

^cIncludes only expenditures by out-of-state astronomers and other scientists who visit Arizona facilities as part of their usual astronomical activities.

Source: *Astronomy and Communities: The Impact of Lighting Practices*, a research report by the authors, May 1985.

ever, the light from Tucson and small communities nearer the observatories, along with the sky glow of metropolitan Phoenix (an area much more distant but having three times Tucson's population) have begun to produce substantial background illumination in the skies over these observatories.

Unless the growing background illumination is controlled, modern astronomical observation will no longer be possible at Arizona's observatories. Additional "light pollution" would diminish the usefulness of existing observatories and adversely impact planning for future astronomical facilities. Mt. Graham, in southeast Arizona near Safford, for example, has been selected as the site for a new observatory to be developed jointly by the University of Arizona and Ohio State University. The same

mountain is in competition with Mauna Kea in Hawaii to be the site for the National New Technology Telescope (NNTT) Observatory that will house a planned 15-meter instrument. With projected costs of \$25 million for the U of A/OSU telescope and well over \$100 million for the NNTT, the building of such facilities in Arizona would generate a sizable economic impact.

To combat further increases in background illumination from outdoor lighting, the astronomical community has been encouraging city and county governments throughout Arizona to adopt "dark skies" ordinances, which would limit artificial sky glow. Although the observatories in Arizona have not yet been seriously affected by the growth of neighboring communities, failure to adopt such ordinances will have an adverse fu-

ture effect on both celestial observations and the Arizona economy.

— Timothy D. Hogan
David Burstein
Michael D. Kroelinger

Dr. Hogan is Professor of Economics in the ASU College of Business and Director of the State Data Center. Dr. Burstein is Assistant Professor of Physics/Astronomy, and Dr. Kroelinger is Associate Professor of Design Sciences in the College of Architecture and Environmental Design.

The authors gratefully acknowledge funding by the Arizona State University Research Fund for a grant entitled, "A Comprehensive Evaluation of the Impact of Community Lighting on Astronomy in Arizona." The foregoing article reports on the economic impact aspects of that research project.

"1984 GSP," from page 1
sector, after a record expansion earlier in 1984, and to virtually no gain in the GSP of the manufacturing industry, following near-record growth earlier in the year. While employment continued to rise during the fourth quarter, output per employee declined sharply, after posting solid gains in six of seven prior quarters.

ANNUAL ECONOMIC GROWTH

The Arizona GSP expanded during 1984 at a rate more than twice that of the Gross National Product (GNP), which grew at a more rapid pace than in any year since 1951 (see Figure 1). This growth pushed the

state's gross product past \$41.5 billion in current dollars (see Table 2).

The GSP of each sector of the Arizona economy climbed during 1984, with most sectors expanding at the fastest rate in several years. Leading the increases were a record 28.0 percent inflation-adjusted rise in the GSP of the finance, insurance and real estate sector and a record gain of 13.3 percent for the trade industry. Manufacturing recorded its second highest rate of growth, 14.7 percent, with the smallest gain occurring in the government sector, 2.8 percent.

SECTORAL SHARES

The trade industry remained Arizo-

na's largest during 1984. In current dollars, its \$7.2 billion gross product represented 17.4 percent of the state's total. With a gross product of nearly \$6.9 billion, the manufacturing industry surpassed the finance, insurance and real estate sector to become the state's second largest. The agriculture and mining industries continued to decline in importance and remained the state's smallest sectors (see Figure 1).

EMPLOYMENT AND PRODUCTIVITY

Employment in Arizona rose 9.6 percent during 1984, more than in any year since 1978. The number of

TABLE 1
QUARTERLY ECONOMIC GROWTH

Quarter ¹	Arizona Gross State Product				Gross National Product
	Billions of Current Dollars, Annualized	Billions of 1972 Dollars, Annualized	Annualized Percent Change (1972 Dollars)	Annualized Percent Change (Adjusted GSP) [*]	Annualized Percent Change (1972 Dollars)
First, 1983	\$33.802	\$16.646	12.6%	15.9%	3.3%
Second, 1983	35.571	17.467	19.7	22.1	9.4
Third, 1983	37.212	18.119	14.9	13.4	6.8
Fourth, 1983	38.223	18.534	9.2	5.7	5.9
First, 1984	39.770	19.535	21.6	22.5	10.1
Second, 1984	40.840	19.897	7.4	11.7	7.1
Third, 1984	42.308	20.686	15.9	12.1	1.6
Fourth, 1984	43.266	20.945	5.0	4.6	4.3

^{*}The adjusted GSP is the annualized GSP in billions of 1972 dollars, minus the contributions of the agriculture and mining industries.

¹All quarters have been revised.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

workers employed by the construction industry jumped 22.5 percent, but this gain merely represented a typical expansionary movement for this highly cyclical industry. Employment in the services industry advanced a record 13.2 percent. At the other extreme, mining employment again declined, and government employment rose only marginally.

This large expansion in employment, coupled with the second highest recorded gain in inflation-adjusted output per employee, produced the record GSP increase. A 4.8 percent rise in output per employee was led by the fifth consecutive annual productivity gain in the mining industry and by the second consecutive jump in productivity of the finance, insurance and real estate sector. In contrast, output per employee declined in the construction and services industries, each of which has rarely produced a gain since 1971.

DEFLATORS

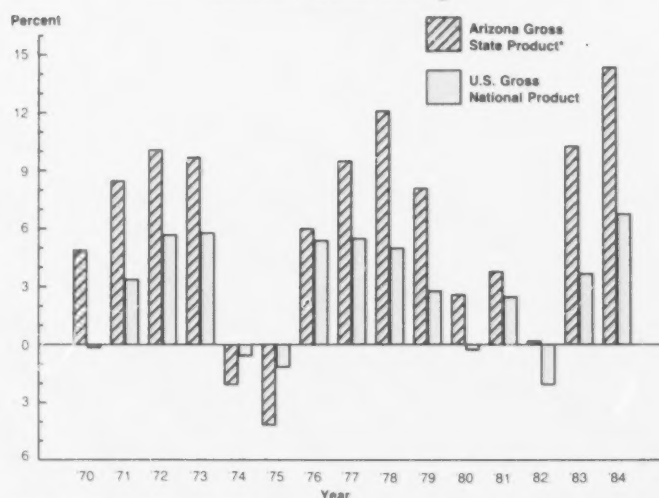
The Arizona GSP implicit price deflator measured a 3.4 percent inflation rate during 1984, slightly less than the 3.8 percent rate of the GNP deflator. For each of the last three years, the Arizona deflator has gauged the inflation rate at between 3.1 percent and 3.6 percent.

The deflator for the finance, insurance and real estate sector declined sharply during 1984, following a slight drop in 1983; these decreases contributed to the rapid gains in this sector's real GSP. Mining's deflator also declined as the price of copper resumed its drop, following a slight interruption during 1983.

OUTLOOK

The Arizona economy has experienced vigorous growth since the

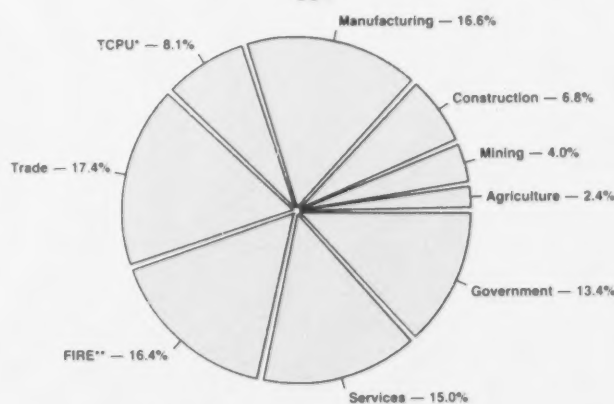
FIGURE I
ARIZONA GROSS STATE PRODUCT*
AND U.S. GROSS NATIONAL PRODUCT
Annual Percent Change



*Adjusted for Mining and Agriculture

Source: Bureau of Business and Economic Research, College of Business, Arizona State University

FIGURE II
ARIZONA GROSS STATE PRODUCT
Sectoral Shares, in Current Dollars
1984



*TCPU - Transportation, Communications, and Public Utilities

**FIRE - Finance, Insurance, and Real Estate

Source: Bureau of Business and Economic Research, College of Business, Arizona State University

TABLE 2
ANNUAL ECONOMIC GROWTH

Year [†]	Arizona Gross State Product				Gross National Product
	Billions of Current Dollars	Billions of 1972 Dollars	Percent Change (1972 Dollars)	Percent Change (Adjusted GSP)*	Percent Change (1972 Dollars)
1980	\$28.550	\$15.618	3.9%	2.6%	-0.3%
1981	32.311	16.874	8.0	3.8	2.5
1982	32.510	16.383	-2.9	0.2	-2.1
1983	36.202	17.692	8.0	10.3	3.7
1984	41.546	20.266	14.6	14.4	6.8

*The adjusted GSP is the GSP in billions of 1972 dollars, minus the contributions of the agriculture and mining industries.

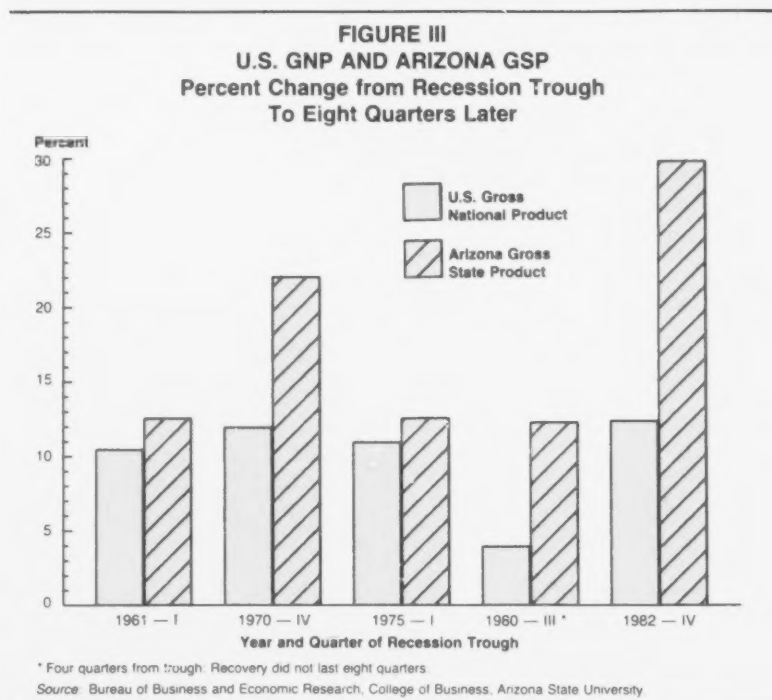
[†]All years have been revised.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

trough of the recession in the fourth quarter of 1982. During the two years of the current recovery, Arizona GSP has grown 29.8 percent in 1972 dollars (Figure III). This rate of growth is more than twice that for Gross National Product (12.4 percent) over the same eight-quarter period and nearly one-third greater than the 22.1 percent growth recorded during the two-year period after the trough of fourth quarter, 1970.

At present, the prevailing outlook on the national level is for no recession in 1985. The consensus of 50 economists polled for Robert Eggert's *Blue Chip Economic Indicators* is that real growth in GNP will be slightly more than 3 percent during 1985. Inflation, as measured by the rate of change in the Consumer Price Index, is forecast to remain below 4 percent, although the unemployment rate is not expected to dip below 7.2 percent.

Slower economic growth experienced in Arizona during the fourth quarter is likely to continue during 1985, but the rate of growth probably will fluctuate widely from quarter to quarter. Gains from one sector to another are also likely to vary consider-



ably because of the uneven effects of the dollar's strength and the trade and budget deficits. Despite these ups and downs, Arizona GSP growth is expected to exceed 5.5 percent,

the long-term annual average, and may exceed 7 percent.

— **Tom R. Rex**
Research Manager

Purchasing Indicators Stay Positive in April

The Arizona economy extended its expansion in April, now into the second quarter and well into its third year. All indicators were positive, but the growth rate in both new orders received and production declined somewhat from the previous month. The price picture showed signs of heating up.

The upward thrust should continue during the spring and summer months, although at only a moderate rate. Inflation probably will step up slightly, but not enough to put the expansion in jeopardy. Employment gains will continue at a relatively slow pace.

Table 1 presents the results of the April survey of Arizona purchasing managers.

PRICES/DELIVERY TIME

Prices paid for major purchased items advanced in April at the highest rate since January and almost double the March rate. Although the inflation rate accelerated, it still is well under all but four months of

JUNE 1985

TABLE 1
APRIL PURCHASING SURVEY

Key Indicators	Percent of Purchasing Managers Indicating Each Response (April compared to March)		
	Higher	Same	Lower
Prices paid for major commodities	27	66	7
Delivery time from vendors	21	63	16
Purchased materials inventory level	33	48	19
New orders received	40	35	25
Production	41	42	17
Employment	29	55	16
Purchases	40	41	19

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

1984, and it seems unlikely that it will reach a level anytime soon that might threaten a continuation of the expansion.

Delivery time on shipments from vendors stretched, following the previous month's static performance. The extension of vendor lead times was small and less than any month of 1984. Such sluggishness shows that the expansion rate has moderated during the first part of 1985.

INVENTORIES/NEW ORDERS

Inventory levels of purchased materials went up substantially in April, following nine months of essentially level performance. This was the largest net increase since June 1984. The close control of inventories exercised by Arizona firms has been one of the principal factors permitting the expansion to continue on a stable,

See "April Purchasing," page 6

"April Purchasing," from page 5 although not flashy, course into its third year.

New orders received by Arizona firms rose again, but at a smaller rate than in either of the past two months. The increase rates so far this year all have been smaller than during the first half of last year, showing that the pace of the expansion has slowed. This is a fairly predictable occurrence for an expansion now well into its third year.

PRODUCTION/EMPLOYMENT

Production also continued to accelerate, but at a slower rate, reflecting the decline in new order growth. Even at the slower increase rate, production activity in Arizona remains healthy.

Employment rose in April for the fourth month in a row. The increase

was almost identical to that during each of the previous two months.

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity—higher, unchanged, or lower—of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

Further moderate employment hikes should continue over the summer months.

PURCHASES

Purchases of materials and supplies by Arizona firms increased at the same rate as in March. The advance in the purchase commitment rate has been consistent during the past several months, but well below the gains recorded during the first half of 1984. However, the increase continues to have a stimulative effect on the economy's overall performance.

— Harold Fearon

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

Valley Home Sales Fall in First Quarter

The number of homes sold in the Phoenix metropolitan area during the first quarter declined 20 percent from the fourth quarter, 1984, level (see Table 1). Fewer homes were sold in every category.

First quarter sales also declined from the first quarter, 1984, level. Only sales of existing single family homes, the largest market segment, did not suffer a sharp drop. The decrease in new home sales largely resulted from higher interest rates during the summer and fall of 1984, when most of the new homes sold during the first quarter were started. New home sales should rebound during the spring and summer, in re-

sponse to lower mortgage interest rates.

MEDIAN SALES PRICE AND APPRECIATION RATE

The median sales price fell for the second consecutive quarter, although it rose for new single family homes. Instead of accelerating, as many observers expected, inflation in home prices has slowed to minimal levels. From the first quarter, 1984, through the first quarter, 1985, the median price of existing townhouses and condominiums rose less than 1 percent, and the price of existing single family homes increased just 2 percent. While the median sales price of

new single family homes was nearly 7 percent more than that of one year ago, this gain is less than the 10 percent annual average during 1984.

A small gain in the appreciation rate during the first quarter substantiates the slower inflation. Home values rose 0.7 percent for the second successive quarter, the smallest gains recorded since initiation of the appreciation measure in 1981. Homes in the Phoenix area appreciated just 3 percent during the year ended first quarter, 1985.

— Tom R. Rex
Research Manager

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single Family			Townhouse/Condominium			Grand Total
	Resale	New	Total	Resale	New	Total	
First Quarter, 1985							
Median sales price	\$70,900	\$79,925	\$73,000	\$62,500	\$58,000	\$62,000	\$71,625
Percent change from:							
Fourth quarter, 1984	-1.8	1.6	-2.3	-2.2	-10.5	-3.8	-0.6
First quarter, 1984	2.0	6.9	2.5	0.8	3.0	3.3	3.1
Number of sales	8,073	1,690	9,763	910	185	1,095	10,858
Percent change from:							
Fourth quarter, 1984	-8.3	-33.7	-14.0	-25.2	-79.8	-48.6	-19.5
First quarter, 1984	-5.2	-33.8	-11.8	-25.2	-73.3	-42.7	-16.4

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Arizona Leading Index Posts Third Straight Gain

The Arizona Index of Leading Economic Indicators rose 0.3 percent in March 1985, the third consecutive gain, following a year of erratic monthly changes (see Figure 1). The index reached 122.7, up from 122.3 in February (1977 = 100).

Only three of the ten index components advanced in March. The diffusion index (the proportion of increasing to decreasing components) of only 30 percent reveals that the March gain in the index needs to be carefully interpreted. It more closely represents a return to the erratic conditions of 1984 than a continuation of the stronger gains experienced in January and February.

INDEX COMPONENTS

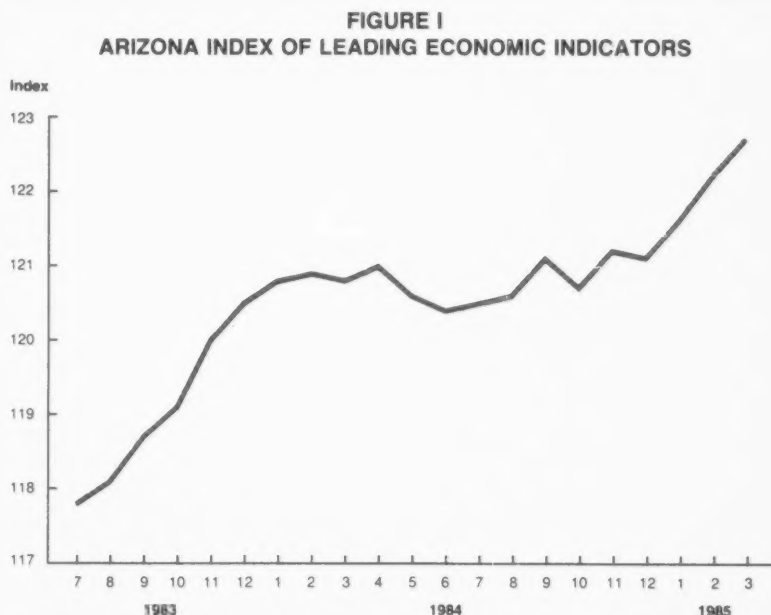
National money supply (M2) again contributed to the index's gain in March, but it grew at a slower rate than during the prior four months (see Table 1). In addition, the level of residential building permits rose for the seventh consecutive month, though at a lesser rate than in February. Finally, average weekly hours worked in the manufacturing industry increased for the second consecutive month.

All five components derived from a survey of the purchasing management associations of Arizona and southern Arizona declined by slight amounts in March, returning to the slow downward trend that was present throughout 1984. The value of each of these components in March was at least 5 percent less than its peak reached at approximately the beginning of 1984.

Unemployment insurance claims rose slightly in March, for the fourth straight month, a negative factor in the index. The second consecutive drop in prices of sensitive raw materials was another negative factor.

OUTLOOK

After sizable gains in January and February, the national Index of Leading Economic Indicators fell in March. Both in Arizona and nationally, a brief, two-month upsurge was, at the least, interrupted in March. Thus, both the Arizona and national economies may grow at a slightly greater rate during the second quarter than during the subpar first quarter,



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS
TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution ⁺		
	Jan.	Feb.	March
Delivery Time*	-.02	.00	-.05
Inventory Levels*	-.03	-.03	-.01
New Orders*	-.02	.01	-.02
Production*	.02	.00	-.05
Employment*	-.01	.00	-.01
Residential Building Permits	.08	.12	.07
Unemployment Insurance Claims	-.19	-.10	-.02
Average Workweek, Manufacturing	-.16	.12	.27
Money Supply	.80	.67	.39
Change in Sensitive Materials Prices	.04	-.08	-.13
OVERALL INDEX	.51	.70	.44

⁺The net contribution of each component is calculated by multiplying the monthly change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

ter, but the March leading indexes suggest this only to be a continuation of the oscillating growth experienced since last summer. The leading indicators continue to signal neither an upcoming recession nor a return to solid growth.

An early look at the April Arizona index, based only on those components from the survey of Arizona pur-

chasing management associations, indicates that the economy will continue to expand. Four of the five components were up, each by the greatest amount since December.

— Luke Koons
Research Analyst

— Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Percent Change from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	43.266	9.1	13.2	NA	NA
Arizona - 1972 Dollars	4th Qtr.	20.945	5.0	13.0	NA	NA
CONSUMER PRICE INDEX						
(1977 = 100)						
Metropolitan Phoenix	1st Qtr.	187.8	1.8	5.9	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	March	122.7	0.3	1.6	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	Feb.	364,017	3	9	715,486	16
Pima County	Feb.	70,633	20	- 8	129,443	- 3
Balance of State	Feb.	39,583	-17	-31	87,047	-14
Arizona	Feb.	474,233	3	1	931,976	9
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Feb.	5,624	9	14	10,759	1
Pima County	Feb.	1,178	- 7	-20	2,450	-25
Balance of State	Feb.	1,160	6	0	2,259	- 6
Arizona	Feb.	7,962	5	5	15,506	- 4
HOME SALES						
Maricopa County - Number	March	4,178	19	- 7	10,858	-16
Maricopa County - Median Price	March	71,400	1.0	2.7	71,625	3.1
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	March	2,593.6	3.4	9.2	7,853.2	9.2

NA = Not Applicable

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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Migration Patterns Net Arizona More Residents

Of the 50 states, Arizona experienced the fourth greatest net in-migration of residents between 1975 and 1980, as 246,000 more people moved to Arizona than left for other states. Only Florida, Texas and Washington gained more population through migration, and only Nevada's net migration as a proportion of its total population exceeded Arizona's proportion.

Several states received a greater number of new residents between 1975 and 1980 than Arizona's 598,000 in-migrants, but most lost nearly as many, or more, residents to other states. More people (1.9 million) moved to California than to any other state, although Florida's 1.8 million in-migrants made it a close second. With 1.4 million in-migrants, Texas was the only other state to exceed 700,000. New York, Illinois, Virginia and Washington also experienced greater in-migration than Arizona.

Arizona encountered out-migration of 353,000 residents between 1975 and 1980. A number of states, primarily in the Northeast and near the Great Lakes, lost more people, including 1.7 million from New York and 1.1 million from Illinois. While nearly 1 million people moved out of Florida, net migration still exceeded 800,000. Likewise, despite nearly

See "Migration," page 2

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Quarterly Forecast Update

Economy To Continue on Roller Coaster

National economic growth remains erratic, as predicted in the last quarterly forecast of the Bureau of Business and Economic Research (April 1985 *Arizona Business*). The stronger expansion of the Gross National Product (GNP) during the fourth quarter, 1984, had led many analysts to be optimistic about economic per-

formance during early 1985. Instead, GNP barely rose during the first quarter, throwing both the public and private sectors into confusion. A sharp drop in productivity, coupled with acceleration in the inflation rate,

See "Forecast," page 5



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"Migration," from page 1

900,000 people leaving, Texas netted more than 500,000 new residents. In contrast, 1.8 million people left California, nearly as many as moved there.

Such aggregate figures mask a number of conflicting migration patterns, which this article will briefly examine.

IN-MIGRATION FROM THE EAST

Arizona's large net gain in population from migration was primarily due to heavy in-migration from the Northeast and Midwest, with little return flow from Arizona to those regions (see Figure 1). More than one-half of Arizona's net migration came from just four states: Illinois, Michigan, Ohio and New York. Each contributed at least 25,000 people to the Arizona population between 1975 and 1980. Together with net inflows from six other states — Pennsylvania, New Jersey, Wisconsin, Minnesota, Indiana and Iowa — 80 percent of Arizona's net migration is explained.

Arizona's two metropolitan counties received 88 percent of the state's total net migration from other states during the 1975-80 period. The Phoenix metropolitan area, with net in-migration of 177,000 people, gained two new residents from out-of-state for every resident who left

County	Other States	Other Arizona Counties
Apache	-1,148	556
Cochise	4,874	-3,253
Coconino	1,818	2,669
Gila	96	-406
Graham	-649	1,073
Greenlee	-563	-628
Maricopa	176,731	-3,988
Mohave	14,048	-341
Navajo	115	2,003
Pima	37,969	1,713
Pinal	3,069	-737
Santa Cruz	-446	-790
Yavapai	6,944	3,809
Yuma	2,831	-1,880
TOTAL	245,686	0

Source: Calculations of the Bureau of Business and Economic Research in the College of Business, Arizona State University, from *Census of Population, 1980: County to County Migration Flows*, prepared by U.S. Bureau of the Census.

Arizona, a ratio greater than that of any Arizona county except Mohave. The Tucson metropolitan area received net in-migration of just 38,000, as two residents moved out-of-state for every three who moved into Pima County. Four counties — Apache, Graham, Greenlee and Santa Cruz — suffered net out-migration of residents to other states between 1975 and 1980 (see Table 1).

Net migration from within the United States was responsible for approximately 60 percent of Arizona's population gain between 1975 and 1980. In-migration from foreign countries and U.S. possessions numbered nearly 52,000, accounting for approximately 10 percent of the population growth, although the number of out-migrants from Arizona to other countries is unknown. The remainder

FIGURE 1
ARIZONA MIGRATION TO AND FROM SELECTED STATES
1975-80



Source: U.S. Bureau of the Census and the Bureau of Business and Economic Research in the College of Business, Arizona State University.

TABLE 2
NET MIGRATION TO TWELVE WESTERN STATES

	Total, All 50 States	Excluding 12 Western States	12 Western States Only	10 Western States*	California Only
Texas	574,007	526,859	47,148	5,010	40,006
Washington	280,417	122,606	157,811	46,122	105,054
Arizona	245,588	239,359	6,329	- 23,808	23,297
Oregon	166,856	56,466	110,390	- 1,258	105,818
Colorado	128,685	125,832	- 24,147	- 37,662	13,515
Nevada	112,689	58,420	54,269	- 4,038	56,236
California	94,458	495,926	- 401,468	- 387,953	-
Utah	66,398	29,383	37,015	9,126	25,561
Wyoming	47,358	31,763	15,595	4,109	4,805
Idaho	44,378	20,772	23,606	- 5,830	27,373
New Mexico	30,080	33,414	- 3,334	- 9,870	4,760
Montana	1,518	14,818	- 13,300	- 19,563	4,957

*Excluding California and Colorado.

Source: Calculations of the Bureau of Business and Economic Research in the College of Business, Arizona State University, from *Census of Population, 1980: County to County Migration Flows*, prepared by U.S. Bureau of the Census.

of Arizona's population growth was due to a net natural increase from births minus deaths.

OUT-MIGRATION TO THE WEST

Large net in-migration hides the fact that Arizona suffered net out-migration of residents to most other western states. More people moved from Arizona to Washington, Oregon, Idaho, Wyoming, Utah, Nevada, New Mexico and Texas than moved from each of these states to Arizona.

The western states from which Arizona received net in-migration — California, Colorado and Montana — sustained net out-migration to each of the other western states as well (see Table 2). Arizona received net in-migration of 23,000 people from California, but every other western state also gained population from California. The number entering Arizona from California was dwarfed by the more than 100,000 California residents received by both Oregon and Washington. Even Utah and Idaho claimed more residents from California than did Arizona.

The divergent migration patterns among the western states are illustrated in Table 2. California is at one extreme, receiving huge net in-migration from eastern states but losing nearly as large numbers to other western states. Washington is at the other extreme, with relatively modest net in-migration from eastern states but the greatest number of residents from other western states. Arizona's situation is more similar to that of California — strong net in-migration from eastern states but net out-

TABLE 3
ARIZONA NET MIGRATION
By Age Group, 1975-80 (in thousands)

Age in 1980	All States	11 Western States*	9 Western States**
5-14	30.5	- 1.4	- 7.3
15-19	18.7	0.0	- 3.3
20-24	32.5	- 4.1	- 3.9
25-29	19.0	- 5.7	- 3.7
30-34	15.6	- 2.8	- 3.9
35-39	15.0	0.0	- 2.9
40-44	10.2	0.2	- 1.8
45-49	9.6	- 0.3	- 1.6
50-54	11.5	1.7	- 0.5
55-59	18.4	4.2	0.0
60-64	24.3	5.6	1.5
65-69	22.0	5.2	2.1
70-74	10.7	2.6	1.2
75 & older	7.5	1.0	0.2
TOTAL	245.7	6.3	- 23.8

*The 11 western states are California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington and Wyoming.

**The nine western states exclude California and Colorado.

Source: Calculations of the Bureau of Business and Economic Research in the College of Business, Arizona State University, from *Census of Population, 1980: County to County Migration Flows*, prepared by U.S. Bureau of the Census.

migration to other western states (excluding California).

The people leaving Arizona for other western states are predominantly in their 20s and early 30s (see Table 3). In contrast, Arizona is receiving net in-migration, even from the western states, of those at least 55 years old. Thus, Arizona is losing those residents who are in the prime consumption and child-bearing years.

Why people leave Arizona for other western states is unknown. Thus, only speculation is possible in attempting to project this pattern for the future. While the number of

residents leaving Arizona for other western states was relatively small between 1975 and 1980, the mere presence of such out-migration is unusual. Should this out-migration increase in coming years, at a time when migration from eastern states is slowing,¹ Arizona's population

¹People are most apt to move when young (18-34 years old) or when near retirement age (60-69 years old). Because the baby boom generation will age out of the 18-34-year-old group during the next 10 years, some slowing of in-migration is likely. Of course, if other migration patterns do not change, out-migration from Arizona should also slow.

gains could be substantially less than anticipated.

MIGRATION OF SENIOR CITIZENS

People between the ages of 55 and 69 years old constituted a major portion of the migration flow into Arizona during the 1975-80 period, as can be seen in Table 3. Isolating those of the traditional retirement age of 65 years and older, net migration to Arizona exceeded 40,100. With 61,400 in-migrants and just 21,300 out-migrants, the proportion of in-migrants to out-migrants is much higher among the elderly population than for the entire population (a ratio of 2.9, compared to 1.7). Net in-migration accounted for one-half of Arizona's total increase in senior citizens; the aging of residents constituted the other half.

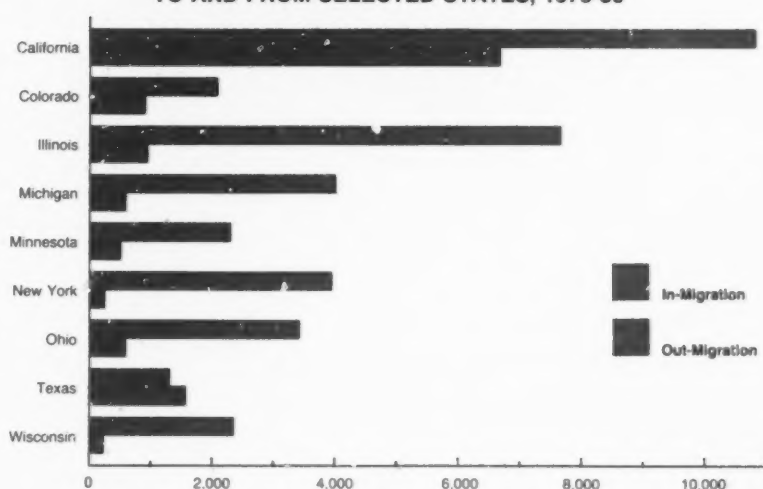
The migration patterns of senior citizens between 1975 and 1980 were somewhat different from those of the entire population. Arizona received net in-migration of senior citizens from nearly all of the western states, excluding California and Colorado, although it was isolated to people 60 years and older.

A sizable portion (40 percent) of the net inflow of senior citizens came from Illinois, New York, Michigan and Ohio, but this proportion was less than that for the entire population. Illinois alone provided net in-migration of more than 6,700 senior citizens, 17 percent of all elderly migrants (see Figure II). With the addition of Wisconsin, Minnesota, Iowa, Pennsylvania, Indiana and New Jersey, nearly two-thirds of all net in-migration of senior citizens to Arizona is accounted for. In contrast to the total population, Washington and Colorado were also strong contributors to the inflow of retirement-age people.

Elderly in-migrants to Maricopa County generally came from states far from Arizona, while a greater proportion of in-migrants from the western states chose Arizona's rural counties as their new home. More senior citizens left Coconino, Greenlee and Navajo Counties for other states than arrived from out-of-state, but the numbers involved were small.

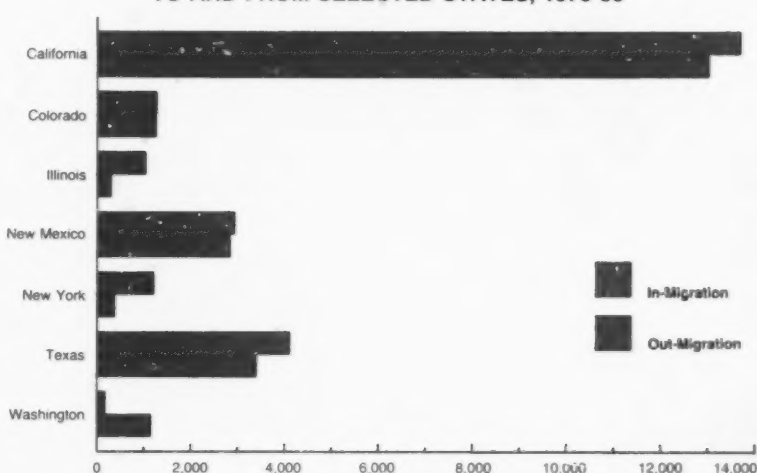
Arizona experienced net out-migration of senior citizens to only five states — Georgia, Louisiana, North Carolina, Hawaii and Texas — compared to net out-migration of the general population to 11 states. The

FIGURE II
ARIZONA MIGRATION OF SENIOR CITIZENS
TO AND FROM SELECTED STATES, 1975-80



Source: U.S. Bureau of the Census and the Bureau of Business and Economic Research in the College of Business, Arizona State University

FIGURE III
ARIZONA MIGRATION OF HISPANICS
TO AND FROM SELECTED STATES, 1975-80



Source: U.S. Bureau of the Census and the Bureau of Business and Economic Research in the College of Business, Arizona State University

number of elderly involved in this net out-migration was minimal, except to Texas.

MIGRATION OF HISPANICS

Being a border state with a relatively large population of Hispanic origin, Arizona's net in-migration of Hispanics from other states was barely positive. One-half of all states received more Hispanics from Arizona than had Hispanic residents move to Arizona between 1975 and 1980.

In particular, more Hispanics left Arizona for other western states than moved from those states to Arizona — a pattern similar to that of the entire population.

Arizona experienced the greatest net out-migration of Hispanics to the states of Washington, Nevada, Utah, Oregon and Hawaii. The greatest net inflows came from states outside the Southwest — Illinois and New York — states that contributed heavily to total net in-migration. California and

Texas also contributed much of the Hispanic net in-migration during the 1975-80 period (see Figure III). While receiving net in-migration from California, that state was also the destination of nearly one-half of the Hispanics who left Arizona.

In addition to the in-migration of Hispanics from other states, a large proportion of the immigrants from other countries between 1975 and 1980 were of Hispanic origin. These immigrants to Arizona totalled 14,800 people, one-third of the state's Hispanic in-migration.

The Phoenix metropolitan area was the destination of many Hispanic in-migrants during the 1975-80 period, including 40 percent of those from other countries. However, one-third of the Hispanic in-migrants to Arizona settled in rural counties, compared to just 12 percent of all in-migrants. Among the rural counties, Yuma and Cochise received the greatest number of these Hispanics. Yuma County, in particular, assimilated a large number of Hispanic immigrants from other countries, nearly as many as Pima County received.

MIGRATION WITHIN ARIZONA

Many Arizona residents moved from one county to another between 1975 and 1980. Yavapai County, with net in-migration of 3,800 Arizona residents, led this intrastate migration (see Table 1), while Maricopa County lost the greatest number of inhabitants to other Arizona counties — nearly 4,000 people. Cochise County experienced net out-migration of more than 3,200 people. Only two counties, Greenlee and Santa Cruz, lost residents both to other Arizona counties and to other states. In addition, Apache and Gila counties each lost more people in total than they

gained.

Nearly 8,000 senior citizens moved from one Arizona county to another between 1975 and 1980. Yavapai County was the greatest beneficiary of this movement, gaining a net of 583 senior citizens from other counties. Maricopa County lost 475 more senior citizens than it gained, with most of the out-migrants moving to Yavapai and Gila counties — probably to the towns of Prescott and Payson.

CHANGING MIGRATION PATTERNS

Migration patterns are not necessarily consistent over time, since they are affected both by national economic conditions and by local circumstances. Migration generally slows during economic recessions and surges during booms. Since the 1980 census, the national economy has experienced both extremes; migration flows to Arizona were very slow during the 1980-82 recessions but reached record levels during the 1984 boom.

During both 1981 and 1982, Arizona's net population inflow was estimated at less than 75,000. With gains in other Sunbelt states comparably low during that period, some analysts prematurely concluded that the Sunbelt was losing its allure. Arizona's record population gain of approximately 130,000 during 1984 revealed that the supposed slowing of migration to the Sunbelt was only a temporary, economy-related situation.

Changes in a local area can also affect national patterns of migration. For example, the Texas economy boomed during the late 1970s, due largely to the oil industry; net in-migration to Texas totaled 574,000

people — 2.3 times Arizona's net increase. But with the oil slump of the 1980s, some areas of Texas have lost population. Arizona's record population gain in 1984 probably resulted, in part, from the circumstances in Texas. Arizona may now be receiving a net inflow of people from Texas, as well as greeting people from other states who previously would have moved to Texas.

California's migration patterns provide another example of changing conditions. The total number of in-migrants to California hardly changed between the late 1950s and the late 1970s. However, the number of people moving out of California more than doubled during this period. California was transformed from a boom state to one that was growing primarily because of net natural increases. Thus, while people keep streaming to California from eastern states, an ever-growing number of residents have apparently become dissatisfied with living conditions, leaving California in favor of other western states.

The basic pattern of migration from the East to the West has endured for decades and seems likely to continue, the magnitude fluctuating with the economic cycle. The share of this migration received by each western state has varied, however, as has the movement from state to state within the West. Thus, while continued population advances in Arizona seem assured, the exact size of future gains is less certain.

— Timothy D. Hogan

— Tom R. Rex
Research Manager

Dr. Hogan is Professor of Economics in the ASU College of Business and Director of the State Data Center.

"Forecast," from page 1

accompanied the slowdown in real GNP.

The Federal Reserve responded more forcefully to this news than most analysts had expected. The Fed had loosened monetary policy last fall, causing interest rates to fall and economic growth to accelerate. Early this year, they announced they would loosen no further, given that the money supply was expanding at rates higher than the target range and that satisfactory economic

growth had resumed during the fourth quarter. However, the Fed took little time to react to the latest news of slower economic growth, lowering the discount rate by 50 basis points in May. Unexpectedly, even long-term interest rates fell by at least as much; for example, mortgage interest rates declined by one-half to one percentage point within a week. This action by the Federal Reserve is likely to provide an immediate boost to the economy, both nationally and locally.

Despite slow growth and the Fed's reaction, no substantial change occurred during the last three months in the basic issues confronting the national economy: the trade and budget deficits and the strong dollar. Thus, continuing inconsistent, relatively slow growth remains the Bureau's national forecast for 1985. The timing of the ups and downs in the GNP is nearly impossible to predict. However, the Federal Reserve appears willing to take quick, decisive action to keep the economy

growing, but not too rapidly. Thus, while the roller coaster ride probably will continue, it is impossible to see around the next corner to know if a climb or a descent is in store.

THE 1985 ARIZONA FORECAST

Slow receipt of data is a common problem for forecasters, one that is more serious for those using and forecasting data on the local level. Halfway through the year, one might think that it would be relatively easy to provide a forecast for the entire year. However, at the time of this writing on June 4, limited data were available concerning the 1985 Arizona economy. At one extreme, an accurate population figure was not yet available for 1984, and preliminary personal income and Gross State Product (GSP) data just recently had become available for the fourth quarter, 1984. The situation was a little better for inflation and retail sales data, with first quarter, 1985, information available. Most up-to-date were the preliminary April statistics on employment and building permits. Thus,

this forecast is based on incomplete data for even the first quarter of the year.

The personal income data for 1984 revealed that growth was even stronger than the Bureau's last estimate of 11.8 percent (see Table 1). Likewise, the expansion of the Arizona GSP exceeded Bureau expectations, with the 14.4 percent increase setting a new record by more than two percentage points.

So far in 1985, from the limited available information, some sectors of the Arizona economy have sustained near-boom growth, while others flirt with a recession. The budget and trade deficits and the strength of the dollar have created a situation nationally that is mirrored in Arizona: The production side of the economy—manufacturing, mining and agriculture—remains weak while other industries—services and construction in particular—continue to expand.

Base Forecast

Employment growth during the first four months of 1985 has been well behind the record 1984 pace, though in any year most of the gains occur

later in the year due to seasonal factors in several industries. Most of the growth during 1985 has occurred in just two sectors: construction and services. The Bureau's employment forecast remains less optimistic, therefore, than those of other local forecasters. Because few new jobs are being created, the unemployment rate has continued to climb, though at a slower pace than during last winter.

Other than revisions made to be consistent with newly-received, actual 1984 data, the Bureau's 1985 base forecast remains identical to that of three months ago, except for the construction sector. With both solid gains in employment and continued near-record levels of building permits issued, the construction industry remains a bright spot in the Arizona economy. In particular, the office and apartment sectors have sustained more intense growth than expected.

Although the number of multifamily units permitted in Maricopa County has declined from 1984 record levels, the previous Bureau forecast for 1985—15,000 units permitted—was

TABLE 1
1985-86 ECONOMIC FORECAST

	Arizona			Maricopa County		
	1984 ^A	1985 ^F	1986 ^F	1984 ^A	1985 ^F	1986 ^F
Gross State Product						
Millions of 1972 Dollars.....	20,266	21,725	23,125	NA	NA	NA
Percent Change	14.6	7.2	6.4	NA	NA	NA
Personal Income						
Millions of Current Dollars	35,504	39,100	42,775	NA	NA	NA
Percent Change	12.5	10.1	9.4	NA	NA	NA
Retail Sales						
Millions of Current Dollars	19,399	21,350	23,275	12,434	13,725	15,025
Percent Change	11.6	10.0	9.0	12.6	10.4	9.5
Consumer Price Index						
Percent Change	NA	NA	NA	5.8	5.7	6.2
Unemployment (Percent)	5.0	5.7	6.5	3.8	4.5	5.3
Wage and Salary Employment						
Number in Thousands	1,181	1,250	1,310	770	820	865
Percent Change	9.6	5.8	4.8	11.1	6.5	5.5
Population						
Number in Thousands	3,095 ^E	3,210	3,325	1,740 ^E	1,810	1,880
Percent Change	4.5	3.7	3.6	4.9	4.0	3.9
New Single Family Housing Units Permitted						
Number	30,845	29,000	29,000	20,774	20,000	20,000
Percent Change	- 0.3	- 0.6	0.0	- 0.9	- 3.7	0.0
New Multifamily Housing Units Permitted*						
Number	47,539	30,000	15,000	36,817	20,000	10,000
Percent Change	43.0	-36.9	-50.0	53.8	-45.7	-50.0
Value of Building Permits						
Millions of Current Dollars	5,262	4,800	4,000	3,811	3,500	2,900
Percent Change	44.0	- 8.7	-16.7	54.3	- 8.2	-17.1

A = Actual; E = Estimated; F = Forecast; NA = Not Available

* Apartment complexes of three or more units.

Note: These forecasts correspond to the "status quo" scenario discussed in the text.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

two-thirds attained during the first four months of the year. While the Bureau continues to expect the rate of construction to slow throughout 1985, it now seems more likely that 20,000 units will be permitted (see Figure I). The higher level of multifamily construction is primarily responsible for the increase in the forecasted value of building permits (see Figure II). As noted in the last forecast, current construction is not based on existing demand. The seasonally adjusted, multifamily vacancy rate is the highest in 10 years and is still climbing; it probably will exceed 12 percent this summer.

Other commercial construction also continues to boom, particularly that of office buildings. Typically in the vicinity of 15 percent, the vacancy rate in this sector already exceeds 20 percent in the Phoenix area; some analysts expect a vacancy rate of 40 percent by the end of 1986.

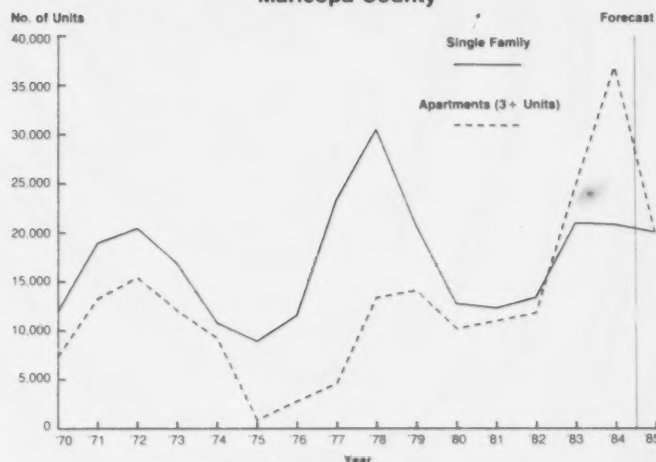
Alternative Forecasts

Rather than present just one forecast, as the Bureau has done in the past, alternative scenarios will also be discussed. Future forecasts, still to be presented quarterly, will offer specific predictions; in this article, however, only predictions for the base scenario are presented in Table 1.

Offering more than one forecast reflects recognition of the great uncertainties that exist within the nation's economy. Since the late 1960s, when high inflation and high unemployment first occurred at the same time (violating all existing economic theories), the U.S. economy has become increasingly complex, encountering new situations during each successive cycle. Neither historical precedent nor adequate economic theory has been available to explain these new situations. For example, the current conditions of large budget and trade deficits, high real interest rates, and a strong dollar have never before occurred. The result is that it is a real challenge to explain what is *currently* happening, much less make a forecast of *future* events. This lack of information and theory is responsible for the relatively poor track record of economic forecasters. (This topic will be explored in detail in upcoming issues of *Arizona Business*.)

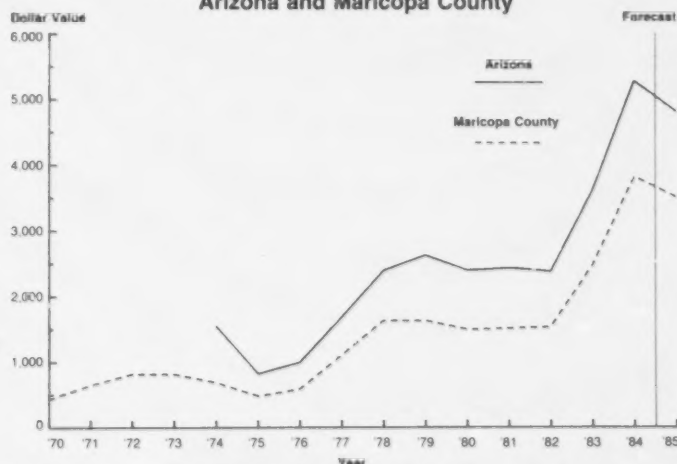
The inability to accurately forecast does not lead to the conclusion that forecasts should not be attempted.

FIGURE I
HOUSING UNITS AUTHORIZED
SINGLE FAMILY AND APARTMENTS (3+ Units)
Maricopa County



Source: Bureau of Business and Economic Research, College of Business, Arizona State University

FIGURE II
DOLLAR VALUE OF BUILDING PERMITS
Arizona and Maricopa County



Source: Bureau of Business and Economic Research, College of Business, Arizona State University

The highly cyclical nature of the economy necessitates forecasts that allow business, government, and the consumer to prepare for the consequences of the cycle's next stage. The presentation of alternative forecasts allows users to analyze the most complete information and choose the course of events they deem most likely.

Optimistic '85 Scenario. In addition to the base forecast, which assumes a continuation of erratic, relatively slow growth, two other scenarios seem possible during the remainder of 1985. The first, representing a more optimistic outlook, appears the more likely of the two. This optimistic alternative assumes that the recent

Federal Reserve actions will have a strong and lasting effect. Coupled with decisive action by Congress this summer to reduce the deficit, interest rates decline and the dollar weakens in an orderly fashion. The domestic manufacturing and trade industries respond, with employment in Arizona growing by an additional 20,000 positions and personal income increasing by an extra \$500 million over the base 1985 forecast.

Pessimistic '85 Scenario. A more pessimistic scenario assumes that the recent Federal Reserve actions have only a short-term effect, similar to that of last fall, and that Congress takes little or no action this summer on the deficit. After some improve-

ment during the second quarter, the economy declines into a growth recession during the remainder of 1985. The slowdown is uneven, with industries such as construction and services largely unaffected. Employment growth slows and the unemployment rate rises. This scenario seems unlikely given the expressed desires of the Federal Reserve and Administration to avoid such conditions. In Arizona, such a slump would likely lower employment, raise unemployment, and lower personal income and GSP from the levels predicted in Table 1.

OUTLOOK FOR 1986

The economy's performance in 1986 is heavily dependent on political actions that should take place during the summer and fall of 1985, particularly the deficit-cutting package. Thus, it seems premature at this time to present either much detail on the various scenarios or a quantitative assessment of their probabilities. The Bureau's forecasts for 1986 will become more specific in the coming months, including predictions, by scenario, for each item in Table 1.

Five scenarios for 1986 are discussed below.

Continuation of the Status Quo

This scenario presupposes that the conditions of the base forecast for 1985 persist through 1986: The economic expansion proceeds along the erratic path followed since summer 1984. Basic assumptions of this scenario include only modest action taken in Washington concerning the federal deficit and continued strength of the U.S. dollar.

Despite being three years old by the beginning of 1986, the expansion should be able to continue, for several reasons:

- Most sectors of the economy still have capacity to expand, with recessionary warning signals far from a concern.
- Because of the lengthy 1980-82 slumps, the economy is still far below its long-term-trend growth rate of 3 percent per year.
- The expansion of the late 1970s lasted nearly five years.

On the other hand, a continuation of such erratic and unbalanced conditions for 2½ years seems unlikely. Nevertheless, such conditions represent a "middle-of-the-road" or "con-

trol" scenario.

This scenario would translate to a continuation of current conditions in Arizona: some weak sectors and some strong sectors combining to produce above average growth. As indicated in Table 1, growth likely would be somewhat slower in 1986 than in 1985, due in large part to substantially lower levels of construction, particularly in the multifamily and office sectors.

A Mild, Short Recession

The key assumptions of this scenario include little progress on the nation's imbalances and moderate economic growth during the remainder of 1985, in response to Federal Reserve actions. However, these steps cause a surge in money supply that, in turn, brings on higher inflation and interest rates by the end of 1985. Coupled with continued weakness in manufacturing and trade, these conditions force a relatively mild and short recession during 1986. The recession is not more serious because of the reasons cited earlier for the economy's continuing ability to expand.

Such a recession was recently predicted by a majority of 400 economists surveyed by the National Association of Business Economists. It likely would result in slower-than-average growth in Arizona, but not in a contraction in economic activity. The migration of people and creation of jobs should not be reduced to a level that would induce more serious effects in Arizona, though most economic sectors should be impacted by the slowdown.

Solid Growth

This alternative represents a continuation of the optimistic scenario presented for 1985. It basically assumes that considerable progress on the deficit, plus action by the Federal Reserve, lowers real interest rates. The dollar weakens and the trade deficit shrinks. Thus, the two key imbalances gradually fade away. The result is not record growth, but rather the 4 percent GNP growth that the Administration has predicted. For the reasons noted earlier, the expansion could continue through at least 1986 without precipitating a recession.

Such a scenario paints a bright picture for the Arizona economy. Following a brief slowdown during 1985, when the expansion still exceeds its

average pace, the economy would again boom in 1986, though the record levels of 1983-84 likely would not be reached.

Recovery

This scenario corresponds to the growth recession alternative presented for 1985. The slower economy in 1985, accompanied by a later reduction in the deficit, allows interest rates to fall and inflationary pressures to decline. However, while the magnitude of the imbalances becomes smaller, the underlying problems do remain. Thus, growth in 1986 is not as consistent or rapid as in the "solid growth" scenario but is stronger and less erratic than in the "status quo" alternative. Conditions in Arizona, therefore, also would lie between these two scenarios.

More Severe Recession

The occurrence of a deeper, more prolonged slump in 1986 is highly unlikely. For a severe recession to occur, current conditions would have to worsen, with no responsive action taken by policy-makers. Virtually all sectors of the economy would suffer, both nationally and in Arizona. The slump in Arizona would likely be as long, but not as deep, as the national decline.

SUMMARY

Developments during this summer should go far toward determining the economy's course for the remainder of 1985 and 1986. The economy's response to recent Federal Reserve actions, as well as to any additional moves by the Fed, represent one important arena to watch. Congressional action, particularly legislation concerning the budget, also will be an important determinant of the economy's performance. However, other Congressional measures, such as new protectionist laws, would also have a direct impact on the economy.

As the economic cycle nears a potential turning point, considerable diversity of opinion arises among analysts and forecasters. The various scenarios discussed in this article represent just some of the possibilities forwarded by various economists.

- Luke Koons
Research Analyst
- Tom R. Rex
Research Manager

Council of 100 Economic Outlook

The second half of 1985 will show stronger economic growth than did the first half of the year, according to a survey of the College of Business Dean's Council of 100. Council members are executives at the senior level, primarily from firms in the metropolitan Phoenix area. They are polled at the beginning of the year and at mid-year by the Bureau of Business and Economic Research.

Council members were asked to compare expected real economic growth nationally in 1985 with 1984, growth in 1986 with 1985, and during the next six months with the previous six months (Table 1). Responses were averaged, then weighted, so that calculated scores of 50 for any entry indicate no change is anticipated, scores of more than 50 reflect expectations for improvement, and scores of less than 50 indicate that worsening business conditions are expected.

Scores for the most recent survey show that the executives expect 1985 to be slightly weaker than 1984 (score of 48); 1986 to be weaker economically than 1985 (score of 47); but the next six months to bring some improvement in economic growth (score of 53). First quarter annualized growth in real GNP was 0.3 percent, a fraction of the 5.9 percent quarterly average for 1984.

Council members widely expected the sales and revenues of their firms to increase during 1986, compared to 1985 (score of 95). However, their outlook for all of 1985, compared to 1984, deteriorated somewhat between the survey of December 1984 (score of 86) and the most recent survey (score of 76).

In the December 1984 survey, 49 percent of the respondents believed

TABLE 1
ASU COUNCIL OF 100
ECONOMIC OUTLOOK SCORES*

Outlook Period	National Outlook		My Organization	
	(6/85)	(12/84)	(6/85)	(12/84)
1985 Compared to 1984.....	48	30	76	86
1986 Compared to 1985.....	47	NA	95	NA
Next Six Months.....	53	NA	76	NA

*Council members had three reply options to each question: Higher, Same, or Lower. The score for each question was calculated by averaging the weighted replies. The weights: Higher - 100; Same - 50; Lower - 0. Scores may range from 0 to 100, with higher scores reflecting a greater degree of optimism. Scores near 50 indicate no change, scores above 50 indicate expected improvement, and scores below 50 indicate expected worsening of business conditions.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 2
ASU COUNCIL OF 100
PROJECTIONS FOR ECONOMIC VARIABLES

Variable	Percent of Council Members Indicating Each Response In Six Months			In Twelve Months		
	Higher	Same	Lower	Higher	Same	Lower
Prime Rate	19	22	59	41	24	35
Unemployment	41	51	8	51	27	22
Inflation Rate	38	57	5	51	35	14
Dow Jones IA	57	30	13	49	30	21

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

interest rates would fall in 1985. Indeed, the prime rate has declined steadily from 11.5 percent in mid-December. Rates will continue to fall, according to 59 percent of respondents to the current survey. However, 41 percent believe the prime rate will be higher again within 12 months. A slim majority (51 percent) believes that both unemployment and inflation will be higher within 12 months. Few Council members believe these indicators will be lower in the near future. Survey respondents (57 percent) also think the stock market will continue its recent upward trend

for at least the next six months.

Asked to project the year in which the national economy will go into recession, 51 percent of respondents expressed the view that 1987 will see the next major economic downturn in the business cycle. Thirty-five percent of respondents expect a recession in 1986, while only 5 percent project a recession in 1985.

— Lee R. McPheters

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Lodging Places Make \$538 Million, Employ 22,000 in '82

Arizona lodging places that have a payroll numbered 704 in 1982, according to the Census of Service Industries conducted by the U.S. Bureau of the Census. These establishments generated total receipts of \$538 million and paid \$150 million to 21,973 employees.

The lodging industry consists primarily of motels (59 percent of all

establishments), hotels (27 percent), and trailer parks (14 percent). Many small lodging places, especially trailer parks, have no employees and, therefore, were not included in this census.

Receipts per establishment within the entire lodging industry averaged \$764,000 in 1982, and employment per establishment averaged 31 work-

ers. These figures were much larger for hotels (\$1.8 million and 80 employees) and much smaller for other lodging places. Employee pay averaged just \$6,800, reflecting the industry's need for part-time and seasonal workers as well as for a large number of unskilled workers.

One-half of the lodging establish-

See "Lodging," page 15

Arizona Construction Steams Ahead in First Quarter

The Arizona construction industry continued its strong level of performance during the first quarter of 1985. As shown in the tables, nearly \$1.4 billion (27,165 permits) worth of new construction activity was authorized, an 8 percent decrease from the 29,539 permits issued during first quarter, 1984, but a 4 percent increase in dollar value (from \$1.3 billion). First quarter activity was a significant improvement over the last quarter of 1984, with a 19 percent jump in recorded permits, from 22,638, and a 13 percent gain in dollar value, from \$1.2 billion.

Driving the expansion has been Maricopa County's strong economic growth. Compared to fourth quarter, 1984, county totals, the number of permits grew 24 percent (13,702 to 17,039), while dollar value rose 23 percent (\$836 million to \$1 billion). The first quarter level of activity in Maricopa County represented 63 percent of permits issued statewide and 71 percent of Arizona's recorded dollar value.

Pima County reported a 13 percent increase in building permits over the preceding quarter (3,716 to 4,212) and a 5 percent improvement in dollar value (\$191 million to \$202 million). Relative to the rest of the

state, Pima County had 16 percent of the recorded permits and 14 percent of the reported dollar value. Table 1 shows the key sectors of construction activity.

SECTORAL ACTIVITY

Residential

Maricopa County. The single family sector has not fully participated in the current construction boom, due primarily to relatively high interest rates. Those rates remained fairly stable during the first quarter, however, even showing signs of decline. Hence, the number of single family home permits rose to 6,277, the second highest quarterly total of the 1980s; this number was surpassed only by the 6,670 permits issued during second quarter, 1983.

Cities showing definite improvement since fourth quarter, 1984, included Phoenix (1,231 permits to 2,172 permits), Chandler (573 permits to 773 permits), Mesa (538 permits to 754 permits), and Peoria (367 permits to 477 permits).

The remodeling sector turned in another strong performance. In the first quarter, 1,599 permits, worth \$13 million, were issued, in contrast to 1,646 permits, valued at \$11 mil-

lion, for the previous quarter. Growth in this sector is in response to the inability of many homeowners to significantly improve their housing through the purchase of a new home.

Rest of Arizona. Single family activity in Pima County improved from the 967 permits of fourth quarter, 1984, to 1,019 permits, but that number was still below the 1,224 permits issued during the first quarter of 1984. Activity occurred predominantly in the unincorporated area of Pima County, with 717 permits issued, in contrast to 265 permits for Tucson.

The rest of Arizona reported a very similar pattern. In the first quarter, 1,257 permits were issued, compared to 1,084 permits in the fourth quarter and 1,867 permits for the first quarter, 1984. Leading areas of activity included unincorporated Yavapai County (256 permits), Flagstaff (69 permits), Luke Havasu City (107 permits), Kingman (67 permits), Prescott (72 permits), Prescott Valley (52 permits), and Yuma (53 permits).

Activity in the mobile home sector continued to improve, with 2,600 first quarter permits issued, an increase from the 2,116 permits of fourth quarter, 1984. Maricopa County accounted for 502 permits, while Pima County recorded 492 permits. Much

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(First Quarter 1985, Fourth Quarter 1984, and First Quarter 1984)

	SINGLE FAMILY		APARTMENTS ^a		OFFICE BUILDINGS ^b		RETAIL STORES ^c		INDUSTRIAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
Maricopa County										
First Quarter, 1985	6,277	408,567,268	438	215,821,238	94	76,507,122	227	62,974,489	151	90,747,907
Fourth Quarter, 1984	4,428	302,155,023	361	159,124,384	104	81,212,957	146	45,611,111	177	57,258,720
First Quarter, 1984	5,937	376,839,887	613	254,155,458	70	72,215,918	222	38,009,877	167	35,259,999
Pima County										
First Quarter, 1985	1,019	57,912,007	87	50,689,954	26	26,798,312	25	10,785,360	27	8,599,202
Fourth Quarter, 1984	867	52,218,933	76	36,383,335	50	37,079,404	30	4,753,969	15	7,656,700
First Quarter, 1984	1,224	67,436,367	59	54,556,789	22	16,315,800	14	2,091,068	10	2,439,100
Rest of Arizona										
First Quarter, 1985	1,257	59,182,724	34	13,449,337	34	1,918,514	69	9,331,777	35	2,381,126
Fourth Quarter, 1984	1,084	51,377,969	16	49,971,841	40	3,404,315	66	14,938,835	34	2,593,428
First Quarter, 1984	1,867	74,896,261	24	6,455,683	19	1,864,189	132	22,138,494	24	1,946,662
Arizona Total										
First Quarter, 1985	8,553	525,661,999	559	279,950,529	154	105,223,948	321	83,091,626	213	101,727,937
Fourth Quarter, 1984	6,379	405,751,925	453	245,479,360	194	121,696,676	242	65,303,915	226	67,508,848
First Quarter, 1984	9,028	516,972,535	696	315,167,930	111	90,395,887	368	62,239,239	201	39,645,761

^a Five or more housing units.

^b Office, bank, medical and professional buildings.

^c Shopping centers and other mercantile buildings.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

of the mobile home activity occurred in the unincorporated areas of Yavapai County (191 permits), Yuma County (214 permits), Pinal County (102 permits), Mohave General (242 permits), and Mohave Valley North (109 permits).

Commercial

Maricopa County. Commercial building, led by the multifamily (five or more housing units) and office building sectors, was the major force behind booming first quarter construction activity in Maricopa County. Depending on the jurisdiction, the multifamily sector includes permits for apartment and condominium projects. Most completed units tend to be in the rental market, not owner-occupied. Contrary to many expectations, the multifamily sector continued to be very active, with 438 permits issued for 8,410 authorized housing units. The level of activity, was down 10 percent from the 9,344 housing units permitted one year earlier, but was up 46 percent over the 7,658 units authorized during the final quarter of 1984. Primary areas of activity included Chandler (480 units), Gilbert (458 units), Glendale (424 units), Mesa (1,653 units), Phoenix (4,229 units) and Tempe (405 units). Even with the record activity of the last two years, the metropolitan vacancy rate — 7 percent during the first quarter — has remained fairly close to historical norms.

Despite increasing discussion concerning the future strength of the office building sector, permit activity remained strong (94 permits, valued at \$77 million). As shown in Table 1, the reported level of activity was consistent with previous quarters. Phoenix led the sector, with 46 permits, worth \$54 million. Most of the permitted projects were structures with 25,000 to 50,000 square feet; only three projects exceeded 200,000 square feet. Office building activity also occurred in Scottsdale (17 permits at \$7.8 million), Tempe (5 permits at \$5.7 million), Mesa (12 permits at \$4.5 million), and Chandler (7 permits at \$3.1 million).

The retail sector regained development momentum, with 227 permits (\$63 million) issued. This level of activity was well above that reported one year earlier (222 permits at \$38 million) and that recorded last quar-

ter (146 permits at \$46 million). The increase in dollar value, while permit activity remained fairly constant, indicates that much of the current construction is related to new retail projects, rather than to the expansion of existing centers. Retail development was reported as follows:

Tempe (55 permits at \$12 million), Scottsdale (6 permits at \$8 million), Phoenix (60 permits at \$19 million), Mesa (20 permits at \$10 million), and Glendale (8 permits at \$11 million). Permit activity in Tempe included a \$1.1 million restaurant, a \$2.2 million specialty center, and a \$1.3 million retail building.

Rest of Arizona. Multifamily activity in Pima County increased from 1,503 authorized units (\$36 million) in the fourth quarter, 1984, to 2,087 authorized units (\$51 million) during first quarter, 1985. Most of the activity occurred in Tucson (1,397 authorized units), compared to 690 units in the unincorporated area of Pima County.

Continued economic growth in Pima County is evidenced by improved activity in the office building sector, in which 26 permits, valued at \$27 million, were issued. This level of activity is below the 50 permits (\$37 million) issued in the fourth quarter but well above the 22 permits (\$16 million) recorded one year earlier. Practically all of the office building permits were issued for Tucson (22 permits at \$26 million), including structures valued at \$8 million, \$3.2 million, \$2 million, and \$1.7 million. The retail sector expanded from 30 permits (\$5 million) at the end of 1984 to 25 permits (\$11 million) for the first quarter, 1985.

The economic imbalance between the two metropolitan counties and the remaining counties is evident from analyzing commercial activity. In the multifamily sector, only 773 units (\$13.5 million) were authorized. Relative to this level of activity, 454 units (\$6.5 million) were approved in Sierra Vista. The office sector continued at a low level of development, with 34 permits (\$2 million) issued. Historically, the retail sector has been fairly strong in the non-metropolitan counties. It has been on a downward trend, however, with 69 permits (\$9 million) issued during the first quarter, in contrast to 66 permits (\$15 million) for the fourth quarter and 132 permits (\$22 million) for the first quarter, 1984.

Industrial

Maricopa County. The county's industrial sector recorded a dramatic jump in construction activity, with the issuance of 151 permits, worth \$91 million. First quarter activity reached its single greatest quarterly level ever, exceeding the \$89 million of industrial activity reported for all of 1983. Contrary to previous years, the leading area was Chandler (9 permits at \$33 million). Other active areas included Phoenix (42 permits at \$16 million), Tempe (67 permits at \$23 million), and Glendale (19 permits at \$10 million). The basic strength of this sector was further shown during the first quarter via a record absorption of 2.6 million square feet.

Rest of Arizona. Industrial activity in Pima County continued to improve, with 27 permits (\$8.6 million) issued. This level of development was more than the 15 permits (\$7.7 million) reported in the fourth quarter and was a definite improvement over first quarter, 1984 (10 permits at \$2.4 million). Industrial activity was fairly evenly divided between Tucson (10 permits at \$4.4 million) and unincorporated Pima County (15 permits at \$4.1 million).

Unlike the metropolitan counties, the rest of Arizona recorded fairly stable industrial activity, issuing 35 permits (\$2.4 million), compared to 34 permits (\$2.6 million) for fourth quarter, 1984, and 24 permits (\$1.9 million) for first quarter, 1984. Most of the permitted projects were small, with no single project exceeding \$500,000. Areas of activity included Cottonwood (3 permits at \$402,000), Yuma (5 permits at \$434,000), and unincorporated Yuma (7 permits at \$474,000).

Other Sectors

This category is an amalgamation of permitted activity. The state totals include permits for churches (33 at \$12 million), medical facilities (13 at \$12 million), and educational facilities (25 at \$20 million). This sector also includes remodeling activity, public buildings, and swimming pools.

As expected, most of the activity occurred in Maricopa County, with 22 permits issued for churches (\$10.5 million), 7 permits for medical facilities (\$7.7 million), and 20 permits for educational facilities (\$18 million). Other areas of activity included a \$1

million medical facility in Douglas, a \$1.2 million educational facility in Flagstaff, a \$3 million religious structure in unincorporated Navajo County, \$1.8 million (3 permits) for medical facilities in Prescott, and \$1.7 million (2 permits) for medical facilities in Cottonwood.

LOOKING AHEAD

As previously noted, most of the first quarter, 1985, construction activ-

ity occurred in the metropolitan counties, in response to strong economic development. Basically, this means that the state is still very dependent on the growth of the economic bases within Maricopa and Pima counties. Until the remaining counties develop more vigorous economic bases, construction activity will continue to be primarily in the two metropolitan counties.

It is apparent from the level of con-

struction activity that capital, even at a fairly high cost, has been available, especially for commercial and industrial projects. The recent decline in interest rates such as those for conventional, 30-year mortgages (from 13.50 percent to 12.50 percent) should provide additional impetus for the single family sector. However, because lenders are tightening qualification standards for mortgage lending, the actual increase in single

Arizona Building Permits: Quarterly Report

First Quarter, 1985	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
APACHE COUNTY	40	1,357,285	4	51,000	0	0	6	6,271	50	1,414,556
Percent Change, Previous Year	25	72	100	-82	0	0	50	-73	31	27
Percent Change, Previous Qtr.	-25	86	100	-3	0	0	50	-31	-16	79
COCHISE COUNTY	249	4,727,871	16	11,387,356	2	278,400	274	2,550,061	541	18,943,688
Percent Change, Previous Year	-34	-45	-48	20	0	16	-12	23	-25	-7
Percent Change, Previous Qtr.	12	-5	6	20	-50	-23	-5	-55	1	-7
COCONINO COUNTY	219	7,360,133	28	6,006,694	2	333,645	78	2,653,611	327	16,354,283
Percent Change, Previous Year	-36	-42	64	307	9,999	9,999	-40	222	-33	8
Percent Change, Previous Qtr.	-30	-26	47	-88	-50	111	-17	211	-24	-74
GILA COUNTY	165	2,966,960	2	212,393	4	124,197	24	152,245	195	3,475,795
Percent Change, Previous Year	-19	8	-50	-64	-50	-67	-45	-93	-25	-42
Percent Change, Previous Qtr.	-5	-11	-71	13	0	51	-22	-93	-10	-42
GRAHAM COUNTY	100	1,204,866	5	69,700	3	47,700	25	20,625	133	1,342,893
Percent Change, Previous Year	-9	-11	-44	130	50	-82	66	-37	-2	-20
Percent Change, Previous Qtr.	-3	-20	-28	-52	9,999	9,999	66	-92	5	-30
GREENLEE COUNTY	5	45,900	0	0	0	0	0	0	5	45,900
Percent Change, Previous Year	9,999	9,999	0	0	0	0	-100	-100	400	1,211
Percent Change, Previous Qtr.	400	3,430	0	0	0	0	-100	-100	25	380
LA PAZ COUNTY	64	1,156,476	7	625,237	1	32,320	67	366,320	139	2,180,361
Percent Change, Previous Year	-20	-1	133	81	9,999	9,999	116	-1	20	15
Percent Change, Previous Qtr.	-39	1	39	112	9,999	9,999	39	17	-12	24
MARICOPA COUNTY	8,745	431,045,798	968	382,114,424	151	90,747,607	7,175	120,458,503	17,039	1,034,366,332
Percent Change, Previous Year	-3	6	-19	-3	-9	157	0	8	-3	8
Percent Change, Previous Qtr.	26	34	3	16	-14	58	24	0	24	23
MOHAVE COUNTY	1,140	16,992,321	68	8,139,697	2	98,000	579	2,574,354	1,789	27,804,372
Percent Change, Previous Year	-24	-39	-59	-56	100	-2	3	-44	-20	45
Percent Change, Previous Qtr.	61	16	19	-10	-50	-86	11	-45	39	6
NAVAJO COUNTY	174	2,550,334	8	2,204,032	0	0	27	522,085	209	5,275,451
Percent Change, Previous Year	3	-29	700	1,299	0	0	3	967	7	38
Percent Change, Previous Qtr.	5	-31	14	170	-100	-100	-9	64	2	7
PIMA COUNTY	2,309	65,055,100	156	103,180,759	27	8,599,202	1,720	25,588,849	4,212	202,423,910
Percent Change, Previous Year	-28	-13	-1	5	169	252	2	8	-15	1
Percent Change, Previous Qtr.	10	6	-7	9	79	12	19	-9	13	5
PINAL COUNTY	486	8,022,594	24	1,649,949	4	121,000	232	1,459,069	726	11,252,512
Percent Change, Previous Year	2	23	-17	-49	100	-83	-22	-1	-7	-6
Percent Change, Previous Qtr.	12	39	-7	-24	9,999	9,999	4	-43	9	7
SANTA CRUZ COUNTY	69	903,290	2	150,000	0	0	15	309,288	86	1,362,578
Percent Change, Previous Year	137	-15	9,999	9,999	0	0	36	108	114	12
Percent Change, Previous Qtr.	175	-10	9,999	9,999	0	0	114	-36	168	-8
YAVAPAI COUNTY	798	24,034,573	46	3,808,084	5	437,702	230	6,221,774	1,079	34,502,713
Percent Change, Previous Year	0	-2	-2	-25	-28	162	-37	59	-11	1
Percent Change, Previous Qtr.	45	35	-4	-44	-28	31	-5	267	27	29
YUMA COUNTY	440	10,666,523	26	3,944,551	12	908,164	155	1,325,984	635	17,047,202
Percent Change, Previous Year	0	9	250	113	500	1,152	11	-83	7	-13
Percent Change, Previous Qtr.	-9	-5	7	43	19	2	17	-85	-3	-30
TOTAL, ARIZONA	14,983	578,312,026	1,326	533,544,556	213	101,727,937	10,607	164,209,027	27,165	1,377,793,546
Percent Change, Previous Year	-11	0	-19	-1	5	158	-1	3	-8	4
Percent Change, Previous Qtr.	22	26	3	-3	-5	50	19	-6	19	13

*Includes mobile homes.

N/R: No Report.

NC: Some communities do not collect dollar valuations.

9,999: The prior period had no activity, or the percent change is greater than 9,999.

-100: The current period had no activity, but the prior period did have activity.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

family activity may not be as strong as its potential.

The tightening of qualification standards will especially affect the entry-level homebuyer. The housing market has shifted, however, to the move-up segment. During the first quarter of 1985, 50 percent of all new homes in Maricopa County were sold for more than \$80,000, in contrast to 38 percent one year earlier.

Homebuyers have become increasingly interested in high-quality amenity features such as vaulted ceilings, larger master bathrooms and kitchens, and more innovative floor plans. Further, homebuilders are again developing master planned communities, to provide a controlled environment and recreational amenities such as golf and tennis.

Given the high level of construction activity, concern is increasing that the multifamily and office building sectors are being overbuilt. It is believed that many current projects are being developed more for their long-term potential than on the basis of current demand. Since metropolitan Phoenix is expected to be one of the fastest growing areas in the United States, the long-term outlook is very promising, even if the current potential is somewhat questionable.

Most people foresee retail development having a very good year. Retail activity has been good, and several new residential areas need shopping centers. Although it is unlikely that industrial development will maintain the pace of the first quarter, record absorption and low vacancy rates should provide stimulation for continued development in Maricopa County. Other areas where industrial activity is expected to continue are Pima County and Casa Grande, the latter having a superior transportation network for distribution.

The strong infusion of capital and the entry of national developers into the Phoenix metropolitan real estate market provide additional recognition of the area's dynamic future potential. The main drawback of the cur-

Arizona New Housing Starts: Quarterly Report						
First Quarter, 1985	Housing Units Authorized*					Total
	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	
APACHE COUNTY	29	2	0	0	20	51
Percent Change, Previous Year	31	-68	0	9,999	9,999	82
Percent Change, Previous Quarter	-3	-70	0	-100	0	-19
COCHISE COUNTY	76	72	0	4	454	606
Percent Change, Previous Year	-50	-31	9,999	33	6,395	124
Percent Change, Previous Quarter	-9	18	-100	9,999	185	98
COCONINO COUNTY	118	54	2	0	120	294
Percent Change, Previous Year	-37	-44	-79	-100	66	-20
Percent Change, Previous Quarter	-2	-36	-89	-100	25	-13
GILA COUNTY	42	39	0	4	0	85
Percent Change, Previous Year	-37	-37	-100	-59	-100	-42
Percent Change, Previous Quarter	-38	-7	0	0	0	-25
GRAHAM COUNTY	14	43	0	0	0	57
Percent Change, Previous Year	7	-4	0	0	0	-1
Percent Change, Previous Quarter	-29	-6	0	-100	0	-18
GREENLEE COUNTY	0	1	0	0	0	1
Percent Change, Previous Year	9,999	9,999	0	0	0	9,999
Percent Change, Previous Quarter	9,999	9,999	0	0	0	9,999
LA PAZ COUNTY	7	32	0	0	0	39
Percent Change, Previous Year	39	-21	9,999	9,999	9,999	-15
Percent Change, Previous Quarter	600	-48	9,999	9,999	9,999	-38
MARICOPA COUNTY	6,277	502	176	411	8,410	15,776
Percent Change, Previous Year	5	-2	-8	-44	-10	-5
Percent Change, Previous Quarter	41	10	33	-40	46	37
MOHAVE COUNTY	278	549	0	24	90	939
Percent Change, Previous Year	-82	71	0	-3	-33	-23
Percent Change, Previous Quarter	66	107	-100	100	21	67
NAVAJO COUNTY	52	84	0	0	0	136
Percent Change, Previous Year	-42	481	9,999	9,999	9,999	14
Percent Change, Previous Quarter	-36	300	-100	9,999	9,999	18
PIMA COUNTY	1,019	492	70	20	2,087	3,688
Percent Change, Previous Year	-18	-21	34	-79	-23	-21
Percent Change, Previous Quarter	17	-3	86	-28	36	24
PINAL COUNTY	121	230	42	4	57	454
Percent Change, Previous Year	14	-9	425	-85	184	9
Percent Change, Previous Quarter	57	-3	800	-87	9,999	28
SANTA CRUZ COUNTY	14	47	0	6	0	67
Percent Change, Previous Year	-26	2,250	9,999	9,999	9,999	219
Percent Change, Previous Quarter	-36	4,600	9,999	9,999	9,999	191
YAVAPAI COUNTY	410	238	20	46	20	734
Percent Change, Previous Year	7	26	150	187	-51	15
Percent Change, Previous Quarter	37	226	25	-13	-75	40
YUMA COUNTY	98	235	0	11	12	356
Percent Change, Previous Year	20	-12	9,999	266	19	-2
Percent Change, Previous Quarter	-16	-4	-100	-15	9,999	-7
TOTAL ARIZONA	8,553	2,800	310	530	11,270	23,263
Percent Change, Previous Year	-5	2	13	-42	-9	-7
Percent Change, Previous Quarter	34	22	12	-38	47	34

*Note: All columns in this table report Housing Units Authorized. In the past, all but the last column reported building permits issued.

N/R: No Report.

9,999: The prior period had no activity, or the percent change is greater than 9,999.

-100: The current period had no activity, but the prior period did have activity.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

rent construction boom is that it is taking place primarily in the two metropolitan counties, while the other counties continue efforts to attract the growth industries that will expand their economic base.

— Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate in the College of Business, Arizona State University. He also serves as Director of the Arizona Real Estate Institute.

Purchasing Indicators Waver in May

The Arizona economy continued to follow a subdued growth curve in May, wavering between a resumption of the robust growth of 1983 and 1984 and the beginning of an economic downturn. The good news is that prices are stable — inflation is stopped dead in its tracks, at least temporarily. It need not be a concern to federal economic policy-makers in their efforts to stimulate a resumption of growth. The bad news is that an inventory liquidation is underway, which will curtail future economic growth. This occurrence has serious implications for Arizona's economic health.

The economy could turn down fairly quickly if the new order growth rate continues to moderate and if the tempo of inventory reductions increases. However, government policy-makers are aware of the precariousness of the current situation. Congressional and White House efforts to get serious about cutting the Federal budget deficit, as well as moves by the Federal Reserve to reduce interest rates, will have a positive effect. They are likely to extend the current, measured expansion well into the second half of the year and, hopefully, into 1986.

Table 1 presents the results of the May survey of Arizona purchasing managers.

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity—higher, unchanged, or lower—of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
MAY PURCHASING SURVEY

Key Indicators	Percent of Purchasing Managers Indicating Each Response (May compared to April)		
	Higher	Same	Lower
Prices paid for major commodities	19	63	18
Delivery time from vendors	21	61	18
Purchased materials inventory level	21	49	30
New orders received	44	28	28
Production	42	35	23
Employment	31	49	20
Purchases	42	27	31

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

PRICES

Prices paid for major purchased items remained unchanged in May, the price indicator registering its smallest increase in more than two years (since February 1983). The underlying inflationary trend appears to have been neutralized, which will be a strong positive factor in extending the current, moderate expansion over the balance of 1985.

DELIVERY TIME

Delivery time on shipments from vendors stretched only slightly in May, marking the fifth consecutive month of small gains. The very moderate increases in delivery times over the past five months show that the rate of economic expansion so far this year is well under the very strong performance of the previous two years.

INVENTORIES

Inventory levels of purchased materials dropped in May, for the first time since last November. Inventory levels have been essentially stable each month this year and have not stimulated economic growth. If inventory reductions gain momentum over the summer months, economic growth will be further curtailed and could turn negative.

NEW ORDERS

New orders received by Arizona firms rose in May at the same rate as in April. The new order increase rate began slowing during fourth quarter, 1984, and has continued to

drop off, with the exception of a slight flurry of activity in February and March.

PRODUCTION

Production went up again, but at a slower rate than in April. The May net increase was the smallest so far this year. Sluggish performance in new orders received, coupled with attempts to reduce inventory levels, can be expected to further adversely affect production rates over the summer months.

EMPLOYMENT

Employment advanced moderately in May, continuing the trend that began in January. The employment gains during each of the five months of 1985 have been smaller than almost any monthly increase of the previous two years, showing the extent to which the growth rate has slowed.

PURCHASES

Purchases of materials and supplies by Arizona firms increased at a rate half as great as that for April and the lowest since last November. This was the second smallest net gain recorded for this indicator since its inception more than two years ago (March 1983); it is indicative of slowing in the economic growth rate.

— Harold Fearon

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

Arizona Leading Index Flat in April

The Arizona Index of Leading Economic Indicators rose only 0.1 percent in April, following three successive larger gains (see Figure 1). The index reached 123.2, up from a revised 123.1 in March (1977 = 100).

While increases during the first three months of 1985 totalled 1.7 percent, the March gain was misleading because it was due to improvement in just three of the ten index components (see Table 1). Thus, April's slight advance represented the second weak month in a row, marking a return to the erratic performance that occurred throughout 1984 (the index rose just 0.6 percent between December 1983 and December 1984). The stronger gains posted in January and February apparently signaled only a brief upsurge in economic activity during the second quarter.

Nine of the ten index components changed only minimally in April; the diffusion index of 50 also measured the stagnation. April's only improvement came in average weekly hours worked in the manufacturing industry, which increased moderately for the third consecutive month.

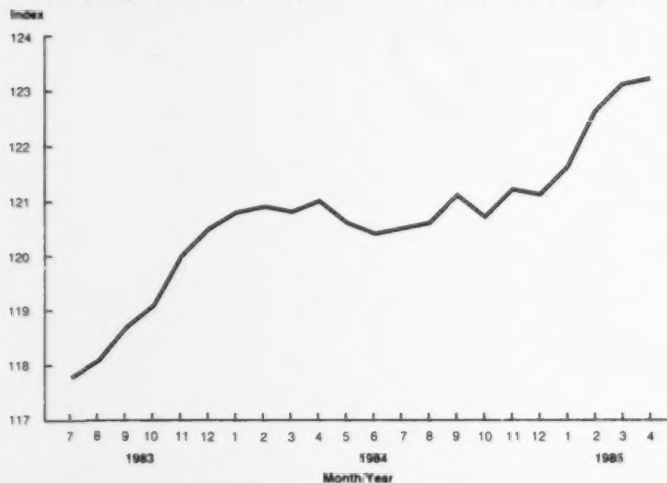
OUTLOOK

The national Index of Leading Economic Indicators fell slightly in April, following a scant 0.1 percent revised gain in March. This index, too, had posted larger increases in January and February. The national and Arizona indexes continue to report similar indications except that the national index has fallen slightly since the beginning of 1984, while the Arizona index has risen slightly. The continuation of this pattern suggests that inconsistent, relatively slow economic growth is likely to persist at least into the summer. Any impact from the moves made by the Federal Reserve on May 17 will not be measured in the index until June at the earliest.

— **Luke Koons**
Research Analyst

— **Tom Rex**
Research Manager

FIGURE 1
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS
TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution ⁺			
	Jan.	Feb.	March	April
Delivery Time [*]	-.02	.00	-.05	-.01
Inventory Levels [*]	-.03	-.03	-.01	.03
New Orders [*]	-.02	.01	-.02	.01
Production [*]	.02	.00	-.05	-.02
Employment [*]	-.01	.00	-.01	.01
Residential Building Permits	.08	.12	.08 [*]	-.03
Unemployment Insurance Claims	-.19	-.10	-.02	.01
Average Workweek, Manufacturing	-.16	.12	.27	.15
Money Supply	.78 [*]	.99 [*]	.40 [*]	-.01
Change in Sensitive Materials Prices	.04	-.08	-.13	-.02
OVERALL INDEX	.49[*]	1.03[*]	.46[*]	.12

^{*}Revised

⁺ The net contribution of each component is calculated by multiplying the monthly change in its index by its relative importance.

^{*}Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

"Lodging," from page 9
ments were located outside the metropolitan areas of Arizona, a proportion more than double the rural areas' share of population. These rural establishments were relatively small; their share of the industry's employment and receipts was approximately 25 percent.

Lodging establishments located in Maricopa County numbered only slightly more than one-third of the

state total, but they generated 50 percent of total receipts. Large hotels are more common in the Phoenix area than elsewhere in Arizona. This is particularly true in Scottsdale, where the 28 lodging places generated nearly 20 percent of the state's lodging receipts and employment. Hotels in Scottsdale employed an average of 247 workers.

— **Tom R. Rex**
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Percent Change from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	43.266	9.1	13.2	NA	NA
Arizona - 1972 Dollars	4th Qtr.	20.945	5.0	13.0	NA	NA
CONSUMER PRICE INDEX						
(1977 = 100)						
Metropolitan Phoenix	1st Qtr.	187.8	1.8	5.9	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	April	123.2	0.1	1.9	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	March	318,880	-12	- 6	1,034,366	8
Pima County	March	72,981	3	11	202,424	1
Balance of State	March	53,957	36	-19	141,004	-16
Arizona	March	445,818	- 5	- 6	1,377,794	4
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	March	5,017	-10	-18	15,776	- 5
Pima County	March	1,238	5	-13	3,688	-21
Balance of State	March	1,502	29	18	3,761	2
Arizona	March	7,757	- 2	-12	23,263	-7
HOME SALES						
Maricopa County - Number	April	5,745	38	- 8	16,603	-14
Maricopa County - Median Price	April	72,000	0.8	2.9	71,700	2.9
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	April	2,600.4	0.3	10.6	10,453.6	9.5

NA = Not Applicable

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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Economic Forecasts: Valuable Despite Large Errors

Economic forecasters have been criticized in recent years for the relative inaccuracy of their predictions. From quantitative analyses of forecast error, analysts have concluded that annual forecasts are more accurate than quarterly forecasts and that no forecaster is consistently more correct than any other. Consensus forecasts (the average of many forecasts) and the forecasts of major econometric services appear to have been equally accurate in recent years.

Well-known econometric services include Data Resources, Inc., Chase Econometrics, and Wharton Econometric Forecasting Associates. Robert Eggert's monthly *Blue Chip Economic Indicators* and the quarterly survey conducted by the American Statistical Association and the National Bureau of Economic Research are examples of consensus forecasts.

FORECAST ACCURACY

The forecasting record of the *Blue Chip Economic Indicators* is representative of the accuracy of the best professional forecasters. The first annual prediction made by this group was for 1977; quarterly prognostications began in 1978. The average er-

See "Forecasts," page 2

Electricity, Gasoline Lead 1.6 Percent CPI Increase

Prices of goods and services in the Phoenix metropolitan area rose 1.6 percent during the second quarter, an increase comparable to that of most recent quarters (see Table 1). The second quarter, 1985, index - 190.8 on a 1977 = 100 base - is 6.0 percent higher than it was one year earlier.

COMPONENT INDEXES

Two items were responsible for nearly two-thirds of the second

quarter advance: Electricity rates rose 8.5 percent due to a switch to the summer rate schedule, and gasoline prices jumped 11.5 percent.

Food and Beverages

After a greater increase last quarter, which was largely seasonal in nature, food and beverage price gains returned to the moderate pace of recent quarters. Grocery store prices rose just 0.6 percent,

See "CPI," page 5

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"Forecasts," from page 1

ror of the consensus forecast made between October and January has been 1.2 percentage points for the Gross National Product (GNP), which is the most important economic measure to most users of forecasts. At first glance, such a record is impressive — after all, is the difference between a 3 percent and 4.2 percent rate of growth really important in making business decisions?

Unfortunately, the accuracy of the forecast has varied by year and, frequently, has been worse at just those times when a prognosis is most important — near a turning point in the economic cycle. For example, after accurately predicting the 1980 recession, the consensus in October 1981 forecast a 1982 GNP gain of 2.2 percent. Not until February 1982 did the consensus expect that GNP would contract that year. However, a long, severe recession had begun in October 1981 and extended throughout 1982; GNP contracted 2.1 percent during 1982.

Quarterly forecasts have been much more inaccurate than annual outlooks. Robert Eggert once warned his readers that "[quarterly] forecasts may be hazardous to your economic wealth." The average error of the GNP forecast for the same period of the following year (e.g., a forecast made during the first quarter, 1985, for the first quarter, 1986) has been more than four percentage points. Large error is not surprising; such a forecast is akin to predicting that the high temperature two weeks from today will be exactly 97 degrees.

The average error of the quarterly forecast made at the beginning of a quarter has been nearly as large. This magnitude of error is the difference between the historical average GNP growth of 3 percent and a recessionary decline. In fact, the consensus has incorrectly predicted an expansion or contraction in GNP in more than one-third of all quarters. Not until a quarter has ended has the average error fallen to two percentage points.

REASONS FOR THE INACCURACY

Forecasters use a combination of methods to develop a typical forecast. They usually place the greatest importance on the output of an econometric model as well as on their own judgment. Each method has its drawbacks.

An econometric model depends on historical relationships. If these relationships change, or a new phenomenon develops, output from the model is likely to be inaccurate. Such changes in economic relationships have become increasingly common since the 1960s. Further, the economy is becoming more complex, making it difficult to adequately represent all relationships in a quantitative model.

Thus, judgment is used to fill the gaps in a model. However, since economic theory frequently is not available to explain new economic developments and because human nature plays an important role in many economic processes, even the judgments of experts are frequently faulty.

The recovery from the 1982 recession exemplifies how the best economic models and judgment can be wrong. In 1982, most forecasters expected a sluggish recovery, largely because inflation-adjusted interest rates were at record-high levels; this was expected to discourage individuals and businesses from borrowing at a typical pace. Instead, the recovery was remarkably normal.

No precedent and an inability to predict human behavior led to the inexact prognosis. A large pent-up demand created by three years of recession, combined with a belief that both the inflation rate and interest rates would rise, led businesses and individuals to borrow heavily even though, from a historical perspective, such action was financially irrational.

VALUE OF FORECASTS

These inherent problems and the resulting poor forecasting record have not quelled the demand for economic forecasts. Because the economy is so cyclical, business success almost requires that forecasts be considered. No other method of forecasting has proven to be superior to the combination of judgment and econometric models used by most prognosticators, at least for annual outlooks. Alternative predictions that assume tomorrow will be like today or that tomorrow will be similar to an extrapolation of yesterday and today are not accurate in a cyclical environment. Even forecasts derived from sophisticated statistical techniques have been less exact than those that spring from the traditional combination of judgment and models.

Conventional economic forecasts, therefore, are valuable, but their poor track record makes it advisable to con-

sult more than one forecast and not to be completely dependent on any one. Knowing the assumptions behind each forecast makes it possible to place more weight on those forecasts derived from assumptions that are in line with a user's own views.

AN ALTERNATIVE

The inaccuracy of conventional economic forecasts, coupled with the value of forecasts, illustrates the desirability of developing alternative forecasting techniques. One alternative method of forecasting GNP, presented in this article, is more accurate than the best conventional forecasts and is so simple that it can be performed by anyone in less than five minutes. Most important, this method has not failed to predict turning points, accurately forecasting each recession and recovery since the early 1970s.

While the Bureau of Business and Economic Research did not invent this method for forecasting annual GNP, it has enhanced the technique's accuracy and extended it to forecast quarterly GNP and annual and quarterly Gross State Product (GSP). This method is based on the strong correlation between the GNP and percent changes in the national Index of Leading Economic Indicators and a similar relationship between GSP and the Arizona Index of Leading Economic Indicators.

Annual GNP Forecast

The 12-month percent change in the leading index correlates highly with the rate of growth in the GNP of the following year; e.g., the percent change in the leading index from December 1983 to December 1984 was used to predict the 1985 GNP. The relationship is nonlinear, as illustrated in Figure 1.

The most accurate forecast results from the December leading index (see Table 2), which is available in preliminary form by February 1 and in revised form one month later. Accurate forecasts can also be derived from the October and November leading indexes. However, the correlation between GNP and the September (or earlier) leading indexes is not high enough to produce an accurate forecast; a shortcoming of this technique, then, is that it cannot be applied prior to December 1, the date the October index is released.

Making the GNP forecast involves just two steps: (1) On December 1, the percent change is calculated between the October leading index and that of the preceding October; (2) Table 1 is used to compare this percent change with that of the GNP. The same methodology would be applied when the November and December indexes are

released. The forecast using the revised December index is usually so accurate that it need not be revised until the actual GNP for the third quarter becomes available.

Since 1970, error in the GNP forecast made from the leading indicators has exceeded one percentage point only in 1971; however, the methodology

was not as accurate prior to 1970. The average error of this forecast has been roughly one-half that of the *Blue Chip* consensus, as illustrated in Table 3.

If a forecast is needed prior to December, a conventional source such as the *Blue Chip Economic Indicators* should be consulted; the average error of this group has been approximately the same in August or September as in December or January. Beginning on the first of December, the forecast derived from the leading indicators is superior. Of course, complete faith should not be placed in any single forecast, especially in one made mechanically.

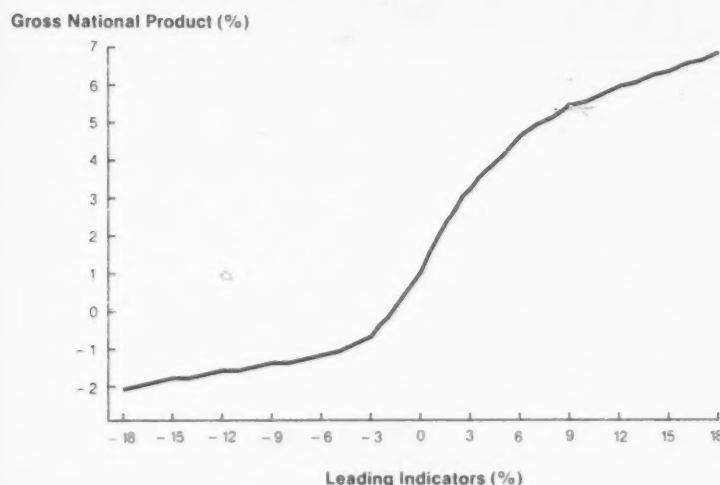
Quarterly GNP Forecast

The leading indicators can also be used to forecast quarterly GNP. While the average error is quite large, it is more precise than conventional forecasts. Error in the forecast made at the beginning of the quarter has averaged just less than three percentage points, compared to an error of nearly four percentage points in the *Blue Chip* consensus. The leading indicators method also more accurately predicts whether the GNP will expand or contract.

Use of any quarterly forecast involves considerable risk. The inaccuracy is so large that prior to the beginning of a quarter, when the leading index approach is wholly unsatisfactory, an educated guess will do nearly as well as any other method. For example, the Bureau used a probability-weighted random number as its GNP forecast. (While selected randomly, if a 3 percent increase, for example, historically had occurred more frequently than a 2 percent decline, then a 3 percent increase more likely would be selected as the probability-weighted random number.) The average error of this random number forecast was five percentage points, compared to an error of slightly more than four percentage points in the *Blue Chip* consensus for a quarterly GNP six to twelve months distant. An educated adjustment to the random number — such as changing a -3 percent forecast to a positive value early in a recovery — probably would reduce the error to a level comparable to the *Blue Chip* consensus.

At the beginning of a quarter, the leading indicators method provides the best forecast. For example, on the first of January, the annualized

FIGURE 1
RELATIONSHIP OF THE ANNUAL CHANGE IN THE NATIONAL INDEX OF LEADING ECONOMIC INDICATORS TO THE ANNUAL CHANGE IN GROSS NATIONAL PRODUCT



Source: Bureau of Business and Economic Research, College of Business, Arizona State University

TABLE 1
FORECASTED CHANGE IN ANNUAL GROSS NATIONAL PRODUCT
(Given Various Levels of One-Year Change in the National Index of Leading Economic Indicators)

Leading Indicators	GNP Forecast	Leading Indicators	GNP Forecast
18.0%	6.8%	- 0.5%	0.7%
17.0	6.6	- 1.0	0.4
16.0	6.5	- 1.5	0.1
15.0	6.3	- 2.0	-0.2
14.0	6.2	- 2.5	-0.4
13.0	6.0	- 3.0	-0.7
12.0	5.9	- 3.5	-0.8
11.0	5.7	- 4.0	-0.9
10.0	5.5	- 4.5	-1.0
9.0	5.4	- 5.0	-1.1
8.0	5.1	- 6.0	-1.2
7.0	4.9	- 7.0	-1.3
6.0	4.6	- 8.0	-1.4
5.0	4.1	- 9.0	-1.4
4.5	3.9	-10.0	-1.5
4.0	3.7	-11.0	-1.6
3.5	3.5	-12.0	-1.6
3.0	3.2	-13.0	-1.7
2.5	3.0	-14.0	-1.8
2.0	2.6	-15.0	-1.8
1.5	2.3	-16.0	-1.9
1.0	1.9	-17.0	-2.0
0.5	1.5	-18.0	-2.1
0.0	1.0		

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 2
ACCURACY OF GNP FORECAST FROM THE INDEX OF LEADING ECONOMIC INDICATORS

	Actual GNP	Forecast			Forecast Error		
		October Index*	November Index	December Index	October	November	December
1970	-0.2%	1.4%	0.2%	-0.3%	1.6	0.4	-0.1
1971	3.4	-1.2	-0.9	0.0	-4.6	-4.3	-3.4
1972	5.7	5.8	5.7	5.5	-0.1	0.0	-0.2
1973	5.8	5.9	5.8	5.8	0.1	0.0	0.0
1974	-0.6	1.2	1.5	-0.2	1.8	2.1	0.4
1975	-1.1	-1.7	-1.8	-1.8	-0.6	-0.7	-0.7
1976	5.4	5.0	5.6	5.9	-0.4	0.2	0.5
1977	5.5	5.2	5.4	5.4	-0.3	-0.1	-0.1
1978	5.0	5.0	4.6	4.6	0.0	-0.4	-0.4
1979	2.8	3.8	3.8	3.4	1.0	1.0	0.6
1980	-0.3	-1.0	-1.1	-1.0	-0.7	-0.8	-0.7
1981	2.5	1.5	2.9	2.5	-1.0	0.4	0.0
1982	-2.1	-0.9	-1.0	-1.1	1.2	1.1	1.0
1983	3.7	2.0	2.5	3.5	-1.7	-1.2	-0.2
1984	6.8	6.7	6.6	6.5	-0.1	-0.2	-0.3
1985	NA	1.9	2.4	1.5	NA	NA	NA
Average Error, Independent of Sign					1.0	0.9	0.6
Average Error, 1972-84 Only					0.7	0.6	0.4

*Use of the October index would allow a forecast to be made at the beginning of December.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

percent change is computed between the August and November leading indexes. This change is then inserted into the formula: quarterly GNP forecast = $2.3 + .22$ times the change in the leading index (the best straight-line relationship derived from a simple regression).

After a quarter is underway, consensus forecasts or forecasts from econometric services are most accurate. However, even after a quarter has ended, their forecasts remain relatively imprecise.

Annual GSP Forecast

The Arizona GSP can be predicted from the Arizona Index of Leading Economic Indicators in a manner similar to that used to forecast GNP from the national index. Unfortunately, the magnitude of the error in the annual GSP forecast is approximately three times that in the GNP forecast. While more rapid growth of GSP partially explains the large error, it is also due, in part, to greater deviation in the Arizona data. The average annual error has been approximately two percentage points, but it exceeded five percentage points in both 1974 and 1976. Further, the 1974 recession was not foreseen.

While the size of these errors reduces the value of making annual GSP forecasts from the leading indicators, the method is generally free of error in predicting whether the GSP change will be greater or smaller than that of the prior year. In the Arizona leading index, the percent change from October to October most accu-

rately predicts the GSP of the following year. If this 12-month change is larger than the comparable change in the leading index of the prior year, the GSP of the following year is also likely to be greater than in the current year. Through these means, the leading index approach helps to determine the Bureau's forecast for the Arizona economy.

Quarterly GSP Forecast

The average error in forecasting quarterly GSP from the Arizona leading index has been too large, at 4.5 percentage points, to make this method practical to use. However, it accurately predicted whether the GSP would expand or contract in 80 percent of the quarters. Similarly, the method correctly foresees whether the change in GSP will be larger or smaller than in

the prior quarter. Thus, the Arizona leading index is of value in assessing current economic conditions.

1985 FORECAST

Using the December-to-December change in the national leading index, the annual GNP forecast for 1985 was just 1.5 percent. As seen in Table 2, however, an unusually large variation existed in the forecasts derived from the October, November and December indexes. While the December forecast of 1.5 percent appears too low — to be accurate, a recession would be required during the last two quarters of 1985 — the November forecast of 2.4 percent is more feasible. Given the 0.3 percent growth of the first quarter and the flash estimate of a 3.1 percent gain during the second quarter, GNP growth of 1.5 percent in each of the

TABLE 3
ACCURACY OF GNP FORECASTING METHODS
Blue Chip Economic Indicators Compared to the
Index of Leading Economic Indicators

	Actual GNP	Forecast on January 1		Forecast Error	
		Blue Chip	Leading Indicators*	Blue Chip	Leading Indicators
1977	5.5%	5.1%	5.4%	-0.4%	-0.1%
1978	5.0	4.3	4.6	-0.7	-0.4
1979	2.8	2.1	3.8	-0.7	+1.0
1980	-0.3	-1.0	-1.1	-0.7	-0.8
1981	2.5	0.7	2.9	-1.8	+0.4
1982	-2.1	0.3	-1.0	+2.4	+1.1
1983	3.7	2.5	2.5	-1.2	-1.2
1984	6.8	5.3	6.6	-1.5	-0.2
1985	NA	3.3	2.4	NA	NA
Average Error, Independent of Sign				1.2	0.7

*Uses percent change for the 12 months ending in November.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; and Robert J. Eggert, *Blue Chip Economic Indicators*.

last two quarters would result in annual average growth of 2.4 percent. In contrast, to reach the 3.3 percent gain predicted by the *Blue Chip* panel in early January, the economy would have to grow an unlikely 6 percent throughout the last two quarters.

The Arizona leading index shows that growth in the GSP should decline sharply in 1985, but this is not surprising, considering the record expansion

of 14.4 percent during 1984. The best estimate is 5.8 percent, but a wide range between 3.8 percent and 7.8 percent must be considered. The official Bureau forecast of 7.2 percent takes into consideration other information, particularly output from the econometric model.

Although first quarter figures are not available at this writing, the leading index methodology suggests that

Arizona's GSP increased more rapidly than the 4.6 percent gain of the fourth quarter, 1984. The second quarter's increase probably was larger than that of the first quarter. The change in the leading index between February and May suggests that the GSP will expand much less rapidly during the third quarter.

— Tom R. Rex
Research Manager

"CPI," from page 1

with advances most apparent in the fruits and vegetables category, due to large increases in fresh fruit prices (see Table 2). In contrast, the index for meats, poultry, fish, and eggs declined due to lower prices for beef, pork, other meats, poultry and eggs. The price of eggs was 21 percent below the level of one year earlier.

Housing

Housing costs again rose moderately despite the large seasonal increase in electricity rates, which were just 3.1 percent higher than they were one year earlier. Renters' costs rose 1.3 percent and homeowners' costs advanced 0.9 percent. The index for household furnishings and operations declined slightly, following a large gain last quarter.

Transportation

A surge in gasoline prices kept this category rising at a rate faster than that of the overall index; the gain during the last year, 8.2 percent, was larger than that of any major category except medical care. A 9.7 percent jump in vehicle insurance rates and a fee increase for auto registration also contributed to the advance in the

transportation index. Partially offsetting these factors were declines in several subcategories: New car prices declined, following a large gain last quarter; used car prices dropped for the second consecutive quarter, following a long period of large gains; and prices for public transportation, vehicle parts and equipment, and vehicle maintenance and repair all fell.

Medical Care

The 1.3 percent increase in medical care costs was the lowest in a year. Hospital costs were again stable, marking the sixth consecutive quarter of almost no change. Health insurance premiums rose just 0.7 percent, the least in three years. A moderate boost in fees for professional services

TABLE 1
PERCENT CHANGES IN
METROPOLITAN PHOENIX CONSUMER PRICE INDEX

Expenditure Category	Relative importance	Percent Change from Preceding Quarter					
		1st 1984	2nd 1984	3rd 1984	4th 1984	1st 1985	2nd 1985
ALL ITEMS	100.00	1.9	1.5	1.7	0.7	1.8	1.6
Food and Beverage	19.0	1.8	0.7	1.0	0.2	2.6	1.1
Housing	38.9	0.6	2.0	2.3	-0.1	1.2	1.4
Apparel and Upkeep	4.8	2.5	-1.3	-0.1	0.4	2.2	3.1
Transportation	21.7	1.6	2.3	1.2	2.2	1.7	2.8
Medical Care	6.6	11.4	1.1	3.0	2.7	3.4	1.3
Entertainment	4.6	1.1	2.3	2.6	0.3	4.6	0.2
Other Goods and Services	4.3	0.8	1.1	2.1	1.2	1.4	1.7

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Second Quarter, 1985
(1977 = 100)

Expenditure Category	Last Qtr. Index	This Qtr. Index	Percent Change	Year-Ago Change
ALL ITEMS	187.8	190.8	1.6	6.0
Food and Beverages	170.3	172.2	1.1	4.9
Food	171.2	173.0	1.0	4.8
Food at Home	169.5	170.6	0.6	4.8
Cereal and Bakery Products	183.3	186.5	1.7	8.5
Meats, Poultry, Fish, and Eggs	161.8	157.9	-2.4	1.2
Dairy Products	158.6	160.1	0.9	2.6
Fruits and Vegetables	182.5	189.1	3.6	10.4
Other Food at Home	157.4	159.5	1.4	4.4
Food Away from Home	171.8	174.9	1.8	5.1
Housing	195.0	197.7	1.4	4.8
Shelter	209.2	210.8	0.8	5.5
Renters' Costs**	112.9	114.4	1.3	7.3
Homeowners' Costs**	105.1	106.0	0.9	4.0
Fuel and Other Utilities	166.5	175.9	5.7	0.9
Gas (piped) and Electricity	180.4	195.7	8.5	-0.6
Household Furnishings and Operations	151.3	150.7	-0.4	5.6
Apparel and Upkeep	143.4	147.9	3.1	5.6
Transportation	186.7	191.9	2.8	8.2
Private Transportation	183.3	189.4	3.3	8.4
New and Used Cars	200.0	194.1	-3.0	4.6
Motor Fuels	193.5	215.7	11.5	7.3
Public Transportation	242.4	232.6	-4.0	5.0
Medical Care	248.2	251.4	1.3	10.8
Entertainment	180.1	180.4	0.2	7.8
Other Goods and Services	168.5	171.4	1.7	6.6

An ** indicates that the base period is second quarter, 1983.

Source (Tables 1 and 2): Bureau of Business and Economic Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

Metro Phoenix CPI

The Metropolitan Phoenix Consumer Price Index (CPI), on which these inflation figures are based, is prepared by the Bureau of Business and Economic Research in the College of Business, Arizona State University. Comprehensive pricing surveys are conducted each quarter by the Bureau in cosponsorship with Valley National Bank.

and another large gain in prescription drug prices were primarily responsible for the advance in the medical care index.

Other Categories

The index for apparel and upkeep jumped a large 3.1 percent, but gains for other goods and services and for entertainment were more moderate. Prices of newspapers and magazines, again rising sharply, were 31.6 percent higher than they were one year earlier.

COMPARISON AREAS

The Phoenix metropolitan area continued to experience the highest inflation rate in the nation, with San Diego's 5.3 percent annual gain the next highest rate. Compared to San Diego, inflation in Phoenix was higher in every major category except housing (see Table 3).

On a more optimistic note, the increase during the second quarter in the Phoenix area was not substantially higher than the national average. The

widest disparity occurred in the food and beverages category.

OUTLOOK

The inflation rate, both in Phoenix and nationally, remains remarkably stable, especially for a stage of the economic cycle when inflation generally accelerates. There is little sign that the situation will soon change; the probability is increasing that rates will remain stable until the next economic downturn or until government action is taken that affects the strength of the dollar and the volume of imports entering the country.

In the Phoenix area, the primary causes of higher inflation have changed. While much of the deviation between the Phoenix and national inflation rates during 1984 could be traced to large advances locally in specific items such as health insurance and used car prices, these items have contributed little to inflation in recent quarters. However, temporary inflationary surges in various items, such as the jump in gasoline prices during the second quarter, have kept the Phoenix inflation rate at a relatively high level. Since a widespread acceleration in inflation is now considered unlikely, whether the Phoenix inflation rate remains relatively stable or declines will depend on a continuation of these short-term inflationary surges.

—Tom R. Rex
Research Manager

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
Second Quarter, 1985

Expenditure Category	Percent Change from Last Quarter		Percent Change from One Year Ago			
	Phoenix	United States	Phoenix	United States	Denver	San Diego
ALL ITEMS.....	1.6	1.2	6.0	3.7	2.9	5.3
Food and Beverages	1.1	-0.1	4.9	2.5	1.8	3.1
Housing	1.4	1.4	4.8	4.1	3.0	7.3
Apparel and Upkeep	3.1	1.7	5.6	3.2	4.0	3.6
Transportation	2.8	2.3	8.2	2.9	2.4	3.9
Medical Care	1.3	1.4	10.8	6.0	7.7	4.1
Entertainment	0.2	0.9	7.8	4.0	-1.0	4.4
Other Goods and Services	1.7	0.6	6.6	6.3	5.8	6.5

Source: Metropolitan Phoenix data compiled by the Bureau of Business and Economic Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data is from the U.S. Department of Labor, Bureau of Labor Statistics.

Censuses of Manufacturing, Mining, Construction

Industry Characteristics, Economic Impact Revealed

Arizona results are now available from the six economic censuses conducted by the U.S. Bureau of the Census at the end of 1982. Articles in previous issues of *Arizona Business* reviewed the Census of Retail Trade, Census of Wholesale Trade and Census of Service Industries. This article discusses the Census of Manufactures, Census of Construction Industries and Census of Mineral Industries.

MANUFACTURING

At the end of 1982, 3,407 manufacturing establishments operated in Arizona, an increase of 18 percent since the previous census in 1977. The number of workers employed by

manufacturing firms rose more rapidly — by 35 percent, to 149,800 in 1982. Despite these gains, manufacturing remained a smaller component of the Arizona economy than of the national economy, with the state's manufacturing employment total accounting for just 0.8 percent of the nation's total.

Employment

Most Arizona manufacturing firms were relatively small; nearly 75 percent employed fewer than 20 workers, and only 6 percent employed more than 100 people. The average payroll per employee was \$20,300 in 1982, with the average value added per employee reaching \$41,100.

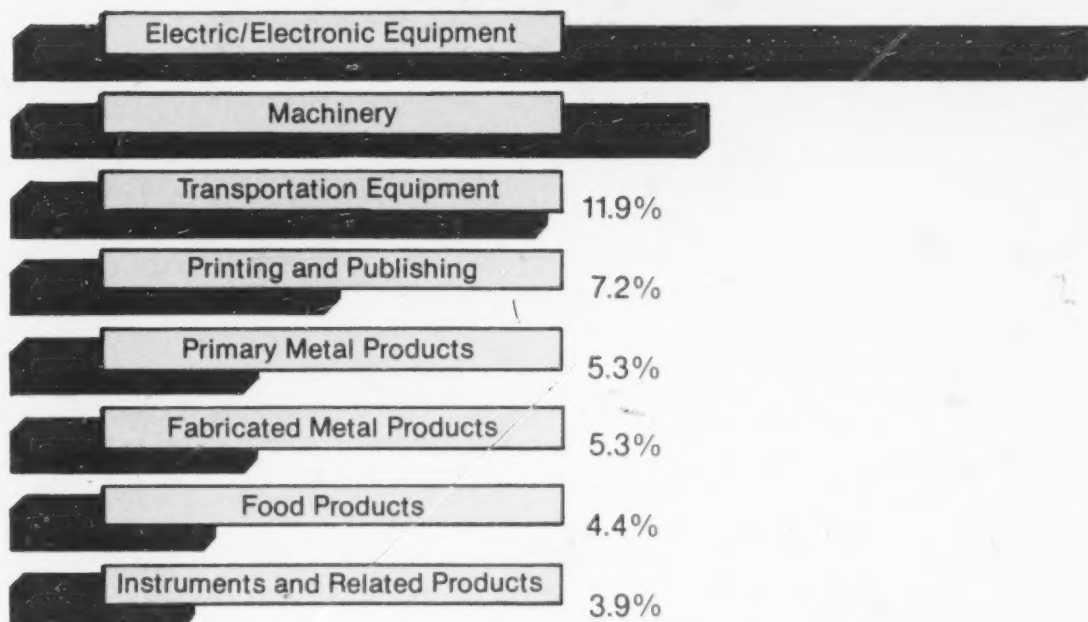
Economic Contribution

The total value added by manufacturing reached \$6.2 billion. Combined with the cost of materials, the total value of shipments was \$12.9 billion, an inflation-adjusted increase of approximately 15 percent since 1977. The manufacturing industry's contribution to the Arizona economy, measured by the Gross State Product (GSP), totaled \$5.2 billion in 1982. It reached \$6.9 billion in 1984.

Location of Firms

Establishments located in the Phoenix metropolitan area accounted for roughly 70 percent of the state's

FIGURE I
SHARE OF MANUFACTURING EMPLOYMENT, 1982
MAJOR ARIZONA MANUFACTURING INDUSTRIES



Source: U.S. Bureau of the Census, 1982 Census of Manufactures

manufacturing firms, employees, and value added. The city of Phoenix was home to 1,417 establishments (42 percent of the total), dwarfing the number in Tempe (318), Scottsdale (159) and Mesa (150). The remainder of the state's manufacturing establishments were split evenly between locations in the Tucson metropolitan area and in the rural counties.

Types of Manufacturer

The manufacture of electric and electronic equipment was Arizona's largest manufacturing industry in 1982, when measured by employment or value added. Other major industries included the manufacture of non-electrical machinery and transportation equipment (see Figure I). In terms of number of establishments, however, the printing and publishing industry was dominant, accounting for 18 percent of all manufacturing establishments.

High technology manufacturing garners considerable attention, but this term has several definitions. Commonly, the high tech category includes portions of several manufacturing industries — machinery, electric and electronic equipment, transportation equipment, and instruments and

related products — including those industries that are most important to Arizona.

The state also experienced significant levels of high technology manufacturing of office and computing machines; electronic components and accessories, which include semiconductors; aircraft and parts; and guided missiles, space vehicles and parts. These manufacturing sectors, together with the instruments sector, accounted for only 8 percent of Arizona's manufacturing establishments in 1982, while employing more than one-third of the manufacturing workers and producing more than one-third of manufacturing value added.

These high tech sectors have also been among Arizona's most rapidly growing. For example, employment in the office and computing machines sector more than doubled between 1977 and 1982.

MINING

Only 38 percent of the 291 mining establishments operating in Arizona during 1982 listed metal mining as their major activity. Nearly as many firms engaged in oil and gas extraction and in the mining of non-metallic minerals.

Establishments involved with metal mining tended to be much larger than those active in other mining operations. Copper mining alone employed 81 percent of all mining workers and produced 69 percent of the industry's value added. Conditions in copper mining have declined considerably since 1982, although the slump had already begun prior to the census.

Changing Conditions

Mining has always been a cyclical industry, although the current slump, due to low worldwide copper prices and foreign competition, is probably the worst the industry has faced. However, conditions in the industry may not be as bad as sometimes expressed, since comparisons are frequently made to 1981, the industry's best year, rather than to a typical year. For example, production of copper in tons during 1984 was only 11 percent less than the average of the 1970s. Mining employment, however, was 41 percent less in 1984 than the average of the 1970s, illustrating the large productivity gains realized during recent years.

Adjusted for inflation by the national Consumer Price Index, the mining industry's GSP was 16 percent less in 1984 than the average of the

1970s. The deflated price of copper was nearly 50 percent less, although price gains during the 1970s had exceeded the general inflation rate.

Economic Contribution

Thus, despite a sizable drop in employment, current mining production is not much below its typical level. However, because of large price decreases, the value of mining's output and its contribution to the state's economy have fallen by greater proportions. The industry's GSP of \$1.7 billion during 1984 constituted just 4 percent of total GSP, a continuation of mining's decline in importance to the Arizona economy, which began during the 1930s.

CONSTRUCTION

An even 17,200 construction companies operated in Arizona during 1982, but only 40 percent had a payroll — the rest were single proprietorships or partnerships, which used only contract labor.

Construction is a highly cyclical industry, and the census year of 1982 marked a low point in the cycle due to the national economic recession. Thus, comparisons to the previous census

taken in 1977 may be unrepresentatively low. Still, the census counted 58 percent more establishments and 22 percent more employees in 1982.

Employment/Receipts

The construction industry employed 64,689 people in 1982, an average of 9.5 workers per establishment with a payroll. In contrast, construction employment exceeds 100,000 today. The average 1982 payroll per employee was \$16,200, and receipts per employee averaged \$98,700. Business receipts totaled \$5.95 billion; 91 percent were earned by establishments with a payroll.

Even those construction companies with a payroll were generally small. Three of four had four or fewer employees, and only 1 percent employed more than 100 people. Receipts exceeded \$1 million in just 13 percent of the establishments; they totaled less than \$100,000 in 35 percent of the firms.

Types of Company

The census placed companies engaged in construction into one of four categories. Of those establishments with a payroll, 26 percent were classi-

fied as general building contractors, such as single family home builders; 5 percent were grouped as heavy construction contractors, such as highway builders; two-thirds were categorized as special trade contractors, such as those engaged in electric work; and 2 percent were grouped as subdividers and developers not elsewhere classified.

Large firms were more common among heavy construction contractors with a payroll. They included just 5 percent of the construction establishments but employed 12 percent of the workers and produced 19 percent of the \$2.2 billion value added. In contrast, small establishments predominated among special trade contractors.

Metro Phoenix Concentration

The metropolitan Phoenix area contributed 60 percent of the state's construction establishments and two-thirds of both construction employment and construction receipts during 1982.

— Tom R. Rex
Research Manager

Arizona Leading Index Revised; Still Signals Inconsistent Growth

The Arizona Index of Leading Economic indicators declined 0.3 percent in May 1985 to 104.4, down from a revised index of 104.7 in April (1977 = 100). The large revision to the April index, originally reported as 123.2, resulted from several methodological enhancements to the index, discussed later in this article.

May's decline was the third in a row since the February 1985 peak of 105.2 (see Figure 1). The total three-month dip of 0.8 percent does not satisfy the decision rule for predicting an upcoming recession. In fact, the declines come on the heels of the strongest gains in the index — from November 1984 through February 1985 — since summer 1983. Thus, recent decreases should be interpreted as signals that the Arizona economy never fully escaped the inconsistent, slow growth that began last summer, despite index advances during the winter.

The diffusion index (the percentage of increasing components) slid to only 25 percent in May, demonstrating widespread weakness in the economy. Only the national money supply (M2) and national prices of sensitive raw materials increased. The gain in M2 followed a rare two-consecutive-month decline.

Average hours worked in the manufacturing industry dropped sharply in May, a major downward influence on the index. The purchased materials inventory level also fell, representing inventory liquidation that probably will slow future economic growth.

ENHANCEMENTS

Two methodological changes, as well as data revisions to the national money supply, were incorporated into the May index, resulting in a revision

to the entire time series. The improvements created little noticeable effect, except that the relative level of the index declined by approximately 20 index points. (The relative magnitude of the index has no meaning, since the index was not designed to measure growth over a long period of time.)

The first enhancement removed the three-month moving average, which had been used to reduce the number and size of erratic monthly changes in the index. By virtue of its construction, a moving average lags behind the latest developments. For example, the national money supply (M2) declined in March, but its contribution to the original March Arizona index was positive because of large increases in January and February. The national leading index also does not use a moving average.

To reduce the large, monthly countercyclic changes introduced by re-

removal of the moving average, equal weighting of index components was also eliminated. Certain components, particularly average hours worked in the manufacturing industry, have substantially more erratic changes, or "noise," than others. A weighting scheme, similar to that used in the national index, had been employed to reduce the weights of those components that suffered from deficiencies in such factors as smoothness, conformity and timing. The revised Arizona leading index is less smooth than the original index, but countercyclic monthly changes are isolated and relatively small in magnitude. In essence, a degree of smoothness was sacrificed for timeliness and greater lead time.

The decision rule discussed in the April 1985 *Arizona Business* remains essentially the same for the revised index. To predict a recession, the index must decline for at least two successive months by a total of at least 1.5 percent; subsequent gains in the index cannot reduce the net decrease to less than 1.5 percent. The same rule is applied to gains in the index to predict recovery from a recession. Use of this decision rule for the revised index results in an average lead time approximately one month longer than in the original index, due to the removal of the moving average. A recession can be recognized an average of seven months prior to its onset; the lead time has varied between four and ten

months in the last three cycles. Lead time for a recovery is shorter — just one month — and has ranged from one to three months during the last four cycles.

Use of a diffusion index to aid interpretation of the leading index was discussed in the May 1985 *Arizona Business*. In the revised index for an expansionary period, the proportion of components with a positive net contribution is at least 60 percent in two-thirds of all months. In contrast, the diffusion index reads 40 percent or less in two-thirds of all months during a contractional period.

The diffusion index's value is illustrated by the interpretation of index changes in recent months. During the 10 months from January through October 1984, the index exhibited small, erratic monthly changes that netted virtually zero change. Then, the index rose by moderate amounts for four consecutive months, from November 1984 through February 1985. Instead of interpreting these gains as an end to the stagnant period, the diffusion index allowed a more cautious interpretation since it reached 60 percent in just one of the four months. The stronger gains during those four months resulted almost entirely from large increases in the money supply.

CRITICISM OF THE NATIONAL INDEX

The accuracy of the national Index of Leading Economic Indicators has come under increasing attack in recent months. As is typically the case in such situations, the arguments, while having some merit, have become exaggerated and inaccurate.

Generally, the national index is revised every few years. The last comprehensive review was completed in 1975, although some changes were made earlier this decade. Another complete review probably should be made. For example, the stock market component of the index has not been a consistently accurate leading indicator during the last 10 years. However, such problems tend to be minimized in an index that comprises 12 components.

An empirical review of the national index suggests that it has been generally accurate. Since May 1984, the index has exhibited erratic changes that have netted virtually no change. Shortly after these erratic changes began, growth of the national economy also became inconsistent and slow.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Bureau of Business and Economic Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution ⁺		
	March	April	May
Delivery Time*	-.06	.04	-.05
Inventory Levels*	.02	.05	-.15
New Orders*	.01	-.06	-.01
Production*	-.04	.02	-.05
Employment*	-.01	.04	-.02
Residential Building Permits	-.08	-.09	-.04
Unemployment Insurance Claims	.03	-.17	.01
Average Workweek, Manufacturing	-.11	.12	-.24
Money Supply	-.09	-.24	.27
Change in Sensitive Materials Prices	-.04	.08	.10
OVERALL INDEX	-.37	-.21	-.18

⁺ The net contribution of each component is calculated by multiplying the monthly change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

Thus, during the last year, the index accurately warned of slower, inconsistent growth that would not deteriorate into a recession.

With its similarities to the national index, the Arizona index might also be open to certain criticisms. However, performance of the indexes suggests that such arguments are relatively unimportant; the indexes are performing as designed.

OUTLOOK

After a spell of negative economic news caused increasing pessimism among economists, recent economic reports, such as the flash estimate of second quarter GNP, have been more positive. Included among the good news was a gain in the national Index of Leading Economic Indicators in May, following two successive declines. Continuing fluctuations in the national and Arizona leading indexes suggest that the economy remains on an erratic course, with neither a recession nor an upswing in sight.

An alternative to the national leading index, the ratio of the coincident index to the lagging index, also signals a continuation of unstable conditions. This ratio normally signals a slowing of economic growth more clearly than the official leading index. Thus, although this ratio declined in 12 of 16 months through May 1985, by a total of more than 8 percent, it is only foreseeing a slow economy.

In Arizona, conditions in some ways appear similar to those of the late 1970s. The Arizona index since December 1983 has behaved similarly to its performance during the period that began in October 1977 (see Table 2). In 1977-78, the index rose just 0.8 percent during the 13 months preceding its peak value of 101.9 in November 1978. In 1984-85, the index increased only 1.4 percent during the 14 months preceding its peak value of 105.2 in February 1985. By mid-1979, the index was declining more rapidly, signaling the 1980 recession. Thus, if this pattern continued to repeat during 1985, the index would begin a definite slide within the next few months, signaling a recession to begin approximately during the second quarter of 1986.

Such a continuation of this pattern is far from certain, however, since index components are behaving in an opposite way to their movements during the late 1970s. During that cycle, residential building permits and

money supply led the decline. During the current cycle, these two are the only components not to decline (see Figure II).

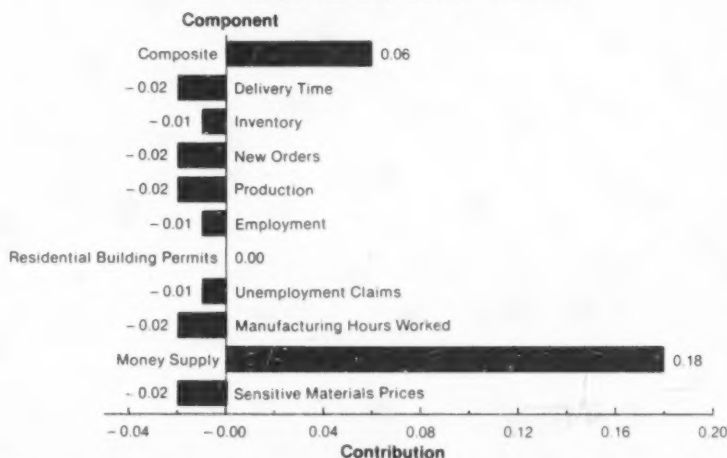
In fact, the drop in interest rates that began late in May may stimulate the economy during coming months. The leading index should reflect any stimulus within the next month or two. Thus, the chance of a recession remains as uncertain as before.

In the last issue of *Arizona Business*, the Bureau presented an eco-

nomics forecast that included several scenarios. As that article was written, Robert Eggert was polling 50 economists for his June issue of *Blue Chip Economic Indicators*. Their quarterly forecasts on Gross National Product (GNP) reveal the uncertainty among economic forecasters:

- 26 percent expect that the slow, inconsistent growth will end within the current quarter, followed by moderate-to-strong growth.
- 32 percent predict that a brief

FIGURE II
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS
Contribution by Component
Average, January 1984 — May 1985



Source: Bureau of Business and Economic Research, College of Business, Arizona State University

TABLE 2
PERFORMANCE OF THE ARIZONA INDEX OF
LEADING ECONOMIC INDICATORS
1977-79 Compared to 1983-85

Months Later	Cumulative Change from December 1983 Index	Months Later	Cumulative Change from October 1977 Index
1	-0.1%	1	-0.2%
2	0.3	2	0.0
3	0.3	3	-0.2
4	0.4	4	-0.1
5	0.2	5	-0.2
6	0.5	6	-0.3
7	0.1	7	0.1
8	0.2	8	-0.4
9	0.3	9	0.1
10	0.1	10	-0.1
11	0.7	11	0.3
12	0.7	12	0.7
13	0.8 ^P	13	1.0
14	0.7	14	1.4 ^P
15	-0.4	15	1.1
16	-0.7	16	1.0
17	-0.1	17	0.7
18	-0.2		
19	-0.4		
20	-1.2		
21	-1.4		
22	-1.8		
23	-2.3		
24	-2.7		

P = peak value

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

upswing in growth during 1985 will deteriorate into a growth recession during 1986.

- 20 percent believe that a brief upswing during 1985 will degenerate into a true recession during 1986.
- 10 percent do not foresee any change from the slow, inconsistent

growth of recent quarters.

- 12 percent forecast a recovery during 1986 from slow, inconsistent growth.

This unusually wide diversity of opinion is another indication of the great uncertainty that currently exists. Close watch of the national and Arizona

leading indexes should provide one of the first definitive signs of the economy's direction.

— **Tom R. Rex**
Research Manager
— **Luke Koons**
Research Analyst

June Purchasing Indicators Reflect Sluggish Growth

The Arizona economy continued its lackluster performance in June, for the third consecutive month. Although the economy inched upward, new orders received, production, and employment all registered lower increases than in May and the smallest hikes since January. Inventory levels dropped again, due to Arizona firms reducing their excess stocks.

The growth curve flattened during the first half of the year, as the huge foreign trade deficit continued to impact manufacturing adversely. However, inflation was well under control, and interest rates declined substantially, which will have a positive effect on consumer demand and capital expenditure plans. The Arizona economy will continue to follow a sluggish growth curve during the balance of the year, mirroring the slow growth rate expected for the national economy.

Table 1 presents the results of the June survey of Arizona purchasing managers.

PRICES

Prices paid for major purchased items advanced in June, following May's level performance, although the increase was small and lower than in all but one month over the past two years. Inflation does not pose an immediate problem. As long as price gains remain on the low side, the Federal Reserve can continue to exert downward pressure on interest rates, in an attempt to breathe new life into an economic expansion now well into its third year.

DELIVERY TIME

Delivery time on shipments from vendors stretched again in June, but at a moderate rate, as has been the case for each month of 1985. This lengthening has been well under that of almost any month of the previous two years, showing that the rate of economic expansion has slowed appreciably.

INVENTORIES

Inventory levels of purchased materials dropped again, for the second consecutive month, although the decrease was small. Arizona firms are keeping a tight rein on inventories as they await more definite evidence of the economy's direction during the balance of 1985.

NEW ORDERS

New orders received in June by Arizona firms increased at a rate about the same as in April and May. The new order rate was much lower during the second quarter than in the first quarter. June's new order advance was the smallest since January.

PRODUCTION

Production rose, but the June gain was smaller than the previous month's and the lowest since December.

EMPLOYMENT

Employment increased in June, for the sixth month in a row, but the advance was less than in May and the smallest since January. Although the employment trend continued positive, payroll additions during the first half of 1985 were much smaller than those of the previous two years.

PURCHASES

Purchases of materials and supplies by Arizona firms were up, but the net

increase was smaller than in May and the lowest since collection of data for this indicator began more than two years ago, in March 1983.

— **Harold Fearon**

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity — higher, unchanged, or lower — of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
JUNE PURCHASING SURVEY

Key Indicators	Percent of Purchasing Managers Indicating Each Response (June compared to May)		
	Higher	Same	Lower
Prices paid for major commodities.....	22	64	14
Delivery time from vendors	24	59	17
Purchased materials inventory level	27	44	29
New orders received.....	35	43	22
Production	32	47	21
Employment	28	52	20
Purchases	35	37	28

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Percent Change from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	43.266	9.1	13.2	NA	NA
Arizona - 1972 Dollars	4th Qtr.	20.945	5.0	13.0	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	2nd Qtr.	190.8	1.6	6.0	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	May	104.4	- 0.3	0.9	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	April	377,880	18	2	1,412,247	6
Pima County	April	71,719	- 1	- 7	274,143	0
Balance of State	April	77,236	43	44	218,240	- 2
Arizona	April	526,835	18	5	1,904,628	4
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	April	4,246	- 15	- 23	20,022	- 10
Pima County	April	1,195	- 3	- 30	4,883	- 24
Balance of State	April	2,032	35	62	5,793	17
Arizona	April	7,473	- 3	- 12	30,736	- 8
HOME SALES						
Maricopa County - Number	May	4,214	- 27	2	20,817	- 11
Maricopa County - Median Price	May	72,000	0	2.9	71,700	2.9
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	May	2,964.4	14.0	- 0.7	13,418.0	7.1

NA = Not Applicable.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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Metro Phoenix Housing Affordability Indexes

New Indexes Reveal Higher Home Affordability in '85

Homes in the Phoenix metropolitan area are more affordable in 1985 than at any time in at least four years, according to Housing Affordability Indexes (hereafter referred to simply as "index") for new and resale housing, developed by the Bureau of Business and Economic Research and the Arizona Real Estate Institute in the ASU College of Business. The new measure reveals that declining mort-

gage interest rates and more rapid gains in household income than in home prices have improved housing affordability, although not to the level of the 1970s.

INTERPRETATION OF THE INDEX

As a general indicator of people's ability to afford a house, the index reflects conditions characteristic of the

Phoenix metropolitan area. Beginning in 1981, the first year that local data became available on home prices, the index quantifies the relationship between median household income and
See "Affordability," page 2

GSP Growth Rebounds; Remains Slow

GSP growth accelerated to 6.2 percent during the first quarter, 1985. This rate remained below the average of 1983 and 1984 (see Table 1 and Figure 1) and was barely greater than the long-term average of 5.5 percent.

Rapid expansion of the Arizona economy ended during the fourth quarter, 1984 (one quarter later than the initial slowdown of the national economy), when the adjusted growth rate of the Arizona Gross State Prod-

uct (GSP) was almost nil, at 0.5 percent. Well below the original fourth quarter estimate of 4.6 percent, this sharp downward revision resulted from reduced personal income estimates by the U.S. Bureau of Economic Analysis.

SECTORAL PERFORMANCE

Growth of all Arizona industries slackened during the fourth quarter,

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- 6 July Purchasing Survey
- 7 AZ Leading Index, June
- 8 AZ Economic Indicators

1984, and/or the first quarter, 1985. As with the national economy, local effects of deceleration varied by sector, both in magnitude and in quarterly timing. For example, growth in the
See "1st Qtr. GSP," page 4



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**TABLE 1
HOUSING AFFORDABILITY:
DEFINITION OF TERMS**

Term	Definition
Median sales price.....	This measure divides the distribution of home prices into two equal parts, with one-half the prices above it, and the other half below it. The median sales price is a more reliable indicator of the home sales prices for an area than is average sales price because the former is less likely to be skewed by a few highly priced homes.
Interest rate.....	The effective interest rate on conventional mortgage loans for single family homes includes the contract interest rate plus fees and charges, or "points," amortized over a 10-year period.
Income.....	Median gross household income is estimated from national and local median effective buying income (similar to disposable income), published in the <i>Sales and Marketing Management</i> magazine.
Income qualification factor....	The index uses a 28 percent income qualification factor. Federal National Mortgage Association guidelines state, "Monthly housing expenses should not represent more than 25 percent to 28 percent of gross monthly income."
Loan amount.....	The loan amount is the median price of a home minus the downpayment. The Metropolitan Phoenix Housing Affordability Index assumes a downpayment of 15 percent.
Loan-to-value ratio.....	The loan-to-value ratio describes the percentage that the loan amount constitutes of the sales price on a median-priced home.
Monthly housing payment.....	As defined by FNMA, a housing payment ("housing expenses") comprises principal, interest, taxes and insurance. Since data on taxes and insurance are not available, they are estimated at 15 percent of total housing expenses, using figures supplied by the National Association of Home Builders.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

"Affordability," from page 1

a financial package for the purchase of a single family home.

Components of the financial package include:

- the median sales price of a new or resale home
- A fixed-rate, conventional, 30-year mortgage with a loan-to-value ratio of 85 percent
- an income qualification standard of 28 percent

Table 1 provides a definition of terms.

An index above 100 suggests that a median-income household is able to qualify for a median-priced home, given the "financial package" explained above. For example, an index of 89 indicates that a median-income household earns only 89 percent of the income needed to qualify for a median-priced home.

A small change in a component of the financial package can cause a relatively large change in the index. For instance, a one-percentage-point change in the loan-to-value ratio or in the income-qualification factor causes a three-point change in the index. To illustrate, the size of the downpayment (loan-to-value ratio) is, in part, a choice of the buyer. The index assumes a loan-to-value ratio of 85 percent; however, if buyers chose to put 25 percent down, the affordability index for resale homes in the Phoenix area would jump 29 points, from 87 to 116.

The income qualification factor used in the Phoenix area index is liberal, as

**TABLE 2
HOUSING AFFORDABILITY INDEX, RESALE HOMES
Metropolitan Phoenix**

Period	Median Sales Price	Interest Rate	Loan Amount	Monthly Housing Payment	Median Gross Monthly Income	Affordability Index
1981	\$65,000	16.7%	\$55,250	\$910	\$1,990	61
1982	65,000	16.7	55,250	910	2,160	67
1983	68,000	13.7	57,800	790	2,270	80
1984						
1st Qtr.	69,525	13.8	59,100	810	2,400	83
2nd Qtr.	70,500	14.3	59,925	850	2,450	81
3rd Qtr.	73,000	14.8	62,050	910	2,490	76
4th Qtr.	72,225	13.9	61,400	850	2,510	82
Annual	71,250	14.2	60,575	860	2,470	81
1985						
1st Qtr.	70,900	13.4	60,275	810	2,540	88
2nd Qtr.	72,500	13.4	61,625	820	2,560	87

Source: Bureau of Business and Economic Research and the Arizona Real Estate Institute, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board News, and income figures are derived from the Annual Buying Survey in *Sales and Marketing Management*.

outlined in the Federal National Mortgage Association (FNMA) guidelines. If the factor were tightened from 28 percent to 25 percent — as it was recently by the FNMA on loans with less than 10 percent down — the index for resale homes during the second quarter, 1985, would decrease nine points, from 87 to 78.

Changes in household income or the mortgage term would have a similar impact on the index. An individual's ability to afford a house depends on the components of their specific financial package.

QUALIFYING INCOME

By setting the index at 100, the gross monthly income needed to qualify for a new or resale home can be calculated. For example, during the second quarter, 1985, Phoenix area households earning the median income had only 78 percent of the income necessary to qualify for a loan on the median-priced new home and 87 percent of that needed for a loan on a median-priced resale home. In other words, a household needed a gross monthly income of \$3,060 to afford a new home and a gross monthly income of \$2,930 to afford a resale home.

HISTORY OF HOUSING AFFORDABILITY

Median sales prices for both resale and new homes have experienced slow growth during the last four years, compared to the rapid growth of home prices during the 1970s. A decline in

FIGURE I
HOUSING AFFORDABILITY INDEX, REALE HOUSING METROPOLITAN PHOENIX AND THE UNITED STATES

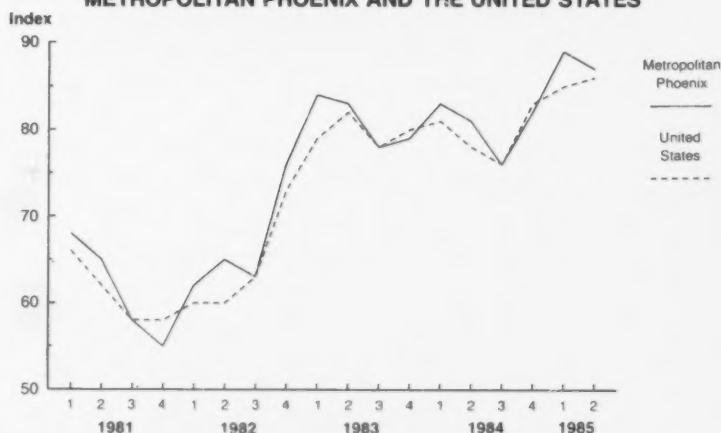
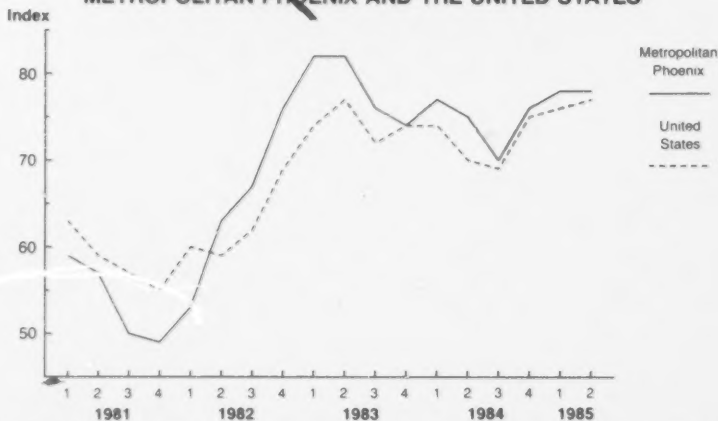


FIGURE II
HOUSING AFFORDABILITY INDEX, NEW HOUSING METROPOLITAN PHOENIX AND THE UNITED STATES



Source (Figures I and II): Bureau of Business and Economic Research and the Arizona Real Estate Institute, College of Business, Arizona State University.

TABLE 3
HOUSING AFFORDABILITY INDEX, NEW HOMES
Metropolitan Phoenix

Period	Median Sales Price	Interest Rate	Loan Amount	Monthly Housing Payment	Median Gross Monthly Income	Affordability Index
1981	\$74,800	16.7%	\$63,575	\$1,050	\$1,990	53
1982	66,100	16.7	56,175	920	2,160	65
1983	70,050	13.7	59,550	820	2,270	78
1984						
1st Qtr.	74,750	13.8	63,525	870	2,400	77
2nd Qtr.	75,875	14.3	64,500	920	2,450	75
3rd Qtr.	79,250	14.8	67,375	990	2,490	70
4th Qtr.	78,700	13.9	66,900	930	2,510	76
Annual	76,950	14.2	65,400	920	2,470	75
1985						
1st Qtr.	79,925	13.4	67,925	910	2,540	78
2nd Qtr.	81,150	13.4	68,975	920	2,560	78

Source: Bureau of Business and Economic Research and the Arizona Real Estate Institute, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board News, and income figures are derived from the Annual Buying Survey in Sales and Marketing Management.

interest rates from 19 percent in late 1981 to 13 percent today also has contributed to home affordability.

Although resale homes in metropolitan Phoenix are more affordable today than at any time during the last four years, a median-income household in the second quarter, 1985, earned only 87 percent of the income necessary to qualify for a median-priced resale home (see Table 2).

Over the last four years, affordability of resale homes in the Phoenix area has been about the same or slightly higher than national affordability of resale homes (see Figure I), due primarily to a lower median sales price for Phoenix area resale homes.¹ Conversely, new homes in the Phoenix area were less affordable in 1981 than they were nationally (see Figure II). In the second quarter, 1985, they have the same affordability index.

Two fundamental factors contributed to improved housing affordability in the Phoenix area during the second quarter:

- a greater decline in interest rates locally than nationally
- a median new-home sales price about \$3,500 less than the median sales price of new homes nationwide

During the recession in 1982, the affordability of a new home in the Phoenix area jumped above the national average. This was due exclusively to a drop locally in the median price of a new home, since the annual interest rate and the annual median household income were identical for the Phoenix area and the United States. Technically, the median price of a new home did not decrease; the housing market demanded lower-priced homes, so new home builders offered smaller homes with fewer amenities, at lower prices.

OUTLOOK

Housing affordability has improved in 1985 and is well above its low point of the last recession. However, the in-

dex is not expected to improve much more during the next year since further declines in mortgage interest rates are unlikely. In addition, gains in household income probably will slow, in response to sluggish economic growth, to approximately the rate of appreciation in home values.

— **Jacqueline Fifield**
Research Analyst

— **Jay Q. Butler**

Dr. Butler is Associate Professor of Real Estate in the ASU College of Business and Director of the Arizona Real Estate Institute.

¹A national Housing Affordability Index for existing homes is published by the National Association of Realtors. Because assumptions applied in that study differ from those underlying the metropolitan Phoenix study, the Bureau of Business and Economic Research and the Arizona Real Estate Institute developed two national indexes (new and resale) for comparison purposes. The NAR index is not referred to in this article.

"1st Qtr. GSP," from page 1 construction; manufacturing; and transportation, communications and public utilities industries slowed during the fourth quarter, 1984, but rebounded during the first quarter, 1985. In contrast, the trade industry and the finance, insurance and real estate sector each remained strong during

the fourth quarter, 1984, but slumped during the first quarter, 1985. Only the services industry maintained steady, albeit slower, growth.

OUTLOOK

The relatively slow expansion of the Arizona economy during these two quarters suggests that the 1985 GSP

performance will not be as robust as originally perceived. This conclusion is corroborated by the state's unemployment rate, which continued to rise throughout the second quarter, 1985.

The greater-than-expected deceleration in the GSP growth rate corresponds to recent GNP movement. With the downward revision for sec-

TABLE 1
QUARTERLY ECONOMIC GROWTH

Quarter	Arizona Gross State Product				Gross National Product
	Billions of Current Dollars, Annualized	Billions of 1972 Dollars, Annualized	Annualized Percent Change (1972 Dollars)	Annualized Percent Change (Adjusted GSP)*	Annualized Percent Change (1972 Dollars)
First, 1983	\$33.802	\$16.646	12.6%	15.9%	3.3%
Second, 1983	35.571	17.467	19.7	22.1	9.4
Third, 1983	37.212	18.119	14.9	13.4	6.8
Fourth, 1983	38.223	18.534	9.2	5.7	5.9
First, 1984	39.770	19.535	21.6	22.5	10.1
Second, 1984	40.840	19.897	7.4	11.7	7.1
Third, 1984 [†]	42.330	20.708	16.3	12.8	1.6
Fourth, 1984 [†]	42.762	20.774	1.3	0.5	4.3
First, 1985	43.948	21.010	4.5	6.2	0.3

*The adjusted GSP is the annualized GSP in billions of 1972 dollars, minus the contributions of the agriculture and mining industries.

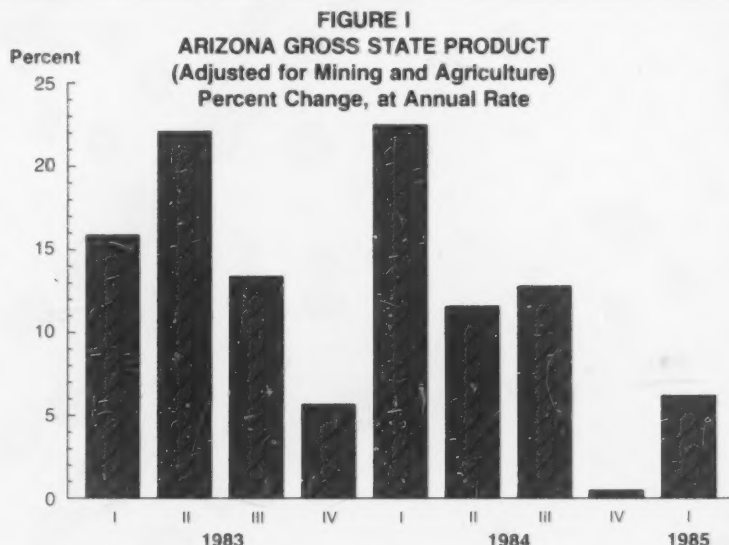
[†] Revised.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

ond quarter GNP, the annual GNP growth rate is nearly certain to total less in 1985 than the long-term average of 3 percent. The 2.4 percent estimate derived from the national Index of Leading Economic Indicators (August 1985 *Arizona Business*), which was far less than most forecasts, now appears to be the best prediction. However, should national economic performance continue to fall short of expectations during the second half of 1985, annual GNP growth may barely reach 2 percent.

In Arizona, therefore, GSP growth closer to the long-term average of 5.5 percent now seems more likely than the 7.2 percent gain that the Bureau had forecast. The prediction derived from the Arizona Index of Leading Economic Indicators was 5.8 percent.

— Tom R. Rex
Research Manager



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

Valley Home Sales Up 37 Percent During Second Quarter

The number of homes sold in the Phoenix metropolitan area during the second quarter jumped 37 percent from the low first quarter level (see Table 1). Second quarter sales nearly attained the level of second quarter, 1984, which was the highest since this series began in 1981.

Second quarter acceleration resulted from both a typical seasonal increase in home sales and the decline in mortgage interest rates that began late last year and continued through early 1985. Further lowering of interest rates during late May was not reflected in second quarter sales; thus,

additional sales gains are possible during the third quarter.

MEDIAN SALES PRICE AND APPRECIATION RATE

Although the median sales price rose during the second quarter, it remained less than the peak value of the third quarter, 1984. The rate of gain in home prices continued below the general inflation rate except for new single family homes, which experienced a 7.0 percent increase since second quarter, 1984, slightly exceeding the Valley's 6.0 percent inflation rate. Higher new home prices are attributable to greater building costs,

especially higher land prices, and to a shift in demand toward more expensive homes. Resale townhouses and condominiums have lost value, with the median sales price during the second quarter dropping 3.1 percent below the level of second quarter, 1984.

The second quarter appreciation rate for single family homes remained at 0.7 percent for the third consecutive quarter. The value of homes in the Phoenix area gained less than 3 percent during the year ended second quarter, 1985.

—Tom R. Rex
Research Manager

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single Family			Townhouse/Condominium			Grand Total
	Resale	New	Total	Resale	New	Total	
Second Quarter, 1985							
Median sales price.....	\$72,500	\$81,150	\$74,950	\$63,000	\$63,950	\$63,450	\$72,650
Percent change from:							
First quarter, 1985.....	2.3	1.5	2.7	0.8	10.3	2.3	1.4
Second quarter, 1984.....	2.8	7.0	4.1	-3.1	1.6	-0.9	3.1
Number of sales.....	9,982	2,545	12,527	1,410	912	2,322	14,849
Percent change from:							
First quarter, 1985.....	24	51	28	55	393	112	37
Second quarter, 1984.....	-5	0	-4	-7	15	1	-3

Source: Bureau of Business and Economic Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Purchasing Indicators Flounder in July Doldrums

July found the Arizona economy still in the doldrums, for the fourth consecutive month. New orders, production, and employment all went up at a slower rate than in June, each registering its smallest increase of 1985. Arizona firms are cautious about the economy's direction over the balance of the year and continue to reduce inventory levels.

The economy likely will plod along throughout 1985, with growth at a moderate, often erratic, pace. No major downswing is expected, nor will the growth curve tilt markedly upward. On the positive side, inflation will remain restrained, and interest rates, if they change at all, are likely to be forced downward. The very large foreign trade deficit will continue to depress many manufacturing operations. Even if the dollar were to plummet, which is highly unlikely, it would take time for that to have a major effect on our industrial machine. In short, the second half, 1985, prediction is for more of the same.

Table 1 presents the results of the July survey of Arizona purchasing managers.

PRICES

Prices paid for major purchased items rose again in July, but the increase was small, extending the period of relative price stability into its second year. The slow inflation rate of the past year has been a key factor permitting the economic expansion to

continue, and inflation shows no sign of heating up over the balance of the year.

DELIVERY TIME

Delivery time on shipments from vendors registered only a small increase in July, showing that vendors do not have a large backlog of orders awaiting shipment. Increases in the delivery time indicator during 1985 have been smaller than the lowest monthly increase recorded during 1984, reflecting a leveling off in the overall economic growth rate.

INVENTORIES

Inventory levels of purchased materials dropped slightly, marking the third month in a row that Arizona firms have reduced their inventory investment. The squeeze on inventory began a year ago, and Arizona firms have maintained a very cautious attitude toward additional inventory investment, holding stocks almost constant. This has been a major factor causing the overall leveling in the economy.

NEW ORDERS

New orders went up in July, but the rate of increase was less than in June and the smallest so far this year. While new order growth moves the Arizona economy to higher levels, the growth rate is marginal and far below that of the first two years of this economic expansion.

PRODUCTION

Production advanced in July at its lowest rate not only of 1985 but since January 1983, the beginning of the recovery. The production indicator has recorded progressively smaller increases during 1985, reacting closely to the new order rate.

EMPLOYMENT

Employment showed a slight gain, for the seventh consecutive month. However, the rate of increase has declined each month, and July's advance was the smallest since December. No major increase in Arizona payrolls is likely over the balance of 1985, and net employment decreases are likely.

PURCHASES

Purchases of materials and supplies by Arizona firms almost doubled the June figure. Hopefully, this is an early sign of a production buildup; however, that judgment must await another several months of data.

— Harold Fearon

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

**TABLE 1
JULY PURCHASING SURVEY**

Key Indicators	Percent of Purchasing Managers Indicating Each Response (July compared to June)		
	Higher	Same	Lower
Prices paid for major commodities	19	72	9
Delivery time from vendors	20	64	16
Purchased materials inventory level	28	40	32
New orders received	34	41	25
Production	33	44	23
Employment	20	64	16
Purchases	37	44	19

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity — higher, unchanged, or lower — of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

Arizona Leading Index Surges to Prior Peak

The Arizona Index of Leading Economic Indicators jumped 0.7 percent in June. The largest gain since April 1983 followed three consecutive monthly declines (see Figure 1) and pushed the index back to its prior peak of 105.2, up from a revised 104.5 in May (1977 = 100).

June's strength was widespread, with improvement in 70 percent of the components — the highest diffusion index since December 1983. Registering between 30 percent and 60 percent in each of the prior 17 months, the diffusion index had signaled stag-

nant economic conditions.

A large gain in the national money supply (M2) led the June advance. Despite an increase in the state's unemployment rate, the number of new unemployment insurance claims declined, also a positive leading signal. In addition, the purchased materials inventory level grew, partially offsetting a large drop in May (see Table 1).

The greatest negative impact on the index was the fourth consecutive decline in the value of residential building permits. This market had not

yet reacted to the lowering of mortgage interest rates in late May.

OUTLOOK

June's large increase merely offsets index declines of the three prior months. The leading index continues to provide no signal of change in the Arizona economy through the end of 1985 — neither a recession nor a return to consistent, strong growth.

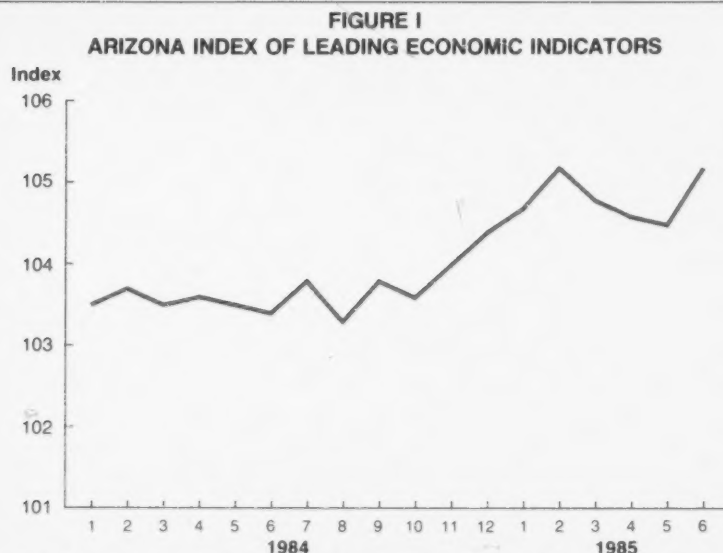
Nationally, the same situation prevails. A large gain in the national index in June is not sufficient to signal the return to a strong economy. While the growth recession may be interrupted by a stronger quarter of economic growth, as occurred during the fourth quarter, 1984, there is no reason to expect slow growth conditions to end. Declines in both interest rates and the strong dollar have not been large enough to have a significant impact on the economy.

The effect of the budget reduction package passed by Congress August 1 on the root cause of the current growth recession, i.e., the large federal budget deficit, is unclear at this writing August 5. The stock and financial markets showed little immediate reaction, probably because the package was both disappointing, with the magnitude of cuts less than desired, and surprising, since some analysts were doubtful that Congress would take action this year, much less prior to the August recess.

Thus, while the package's effect probably will be minimally positive, a huge deficit will remain. This should keep the dollar relatively strong, the trade deficit relatively large, and economic growth relatively slow. As a result, the signals sent by the leading indexes — more slow but erratic growth — likely are still valid.

—Tom R. Rex

Research Manager



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution ⁺			
	March	April	May	June
Delivery Time [*]	-.06	.04	-.05	.05
Inventory Levels [*]	.02	.05	-.15	.10
New Orders [*]	.01	-.06	-.01	.04
Production [*]	-.04	.02	-.05	-.01
Employment [*]	-.01	.04	-.02	.02
Residential Building Permits	-.08	-.09	-.02 ^r	-.08
Unemployment Insurance Claims	.03	-.17	.01	.15
Average Workweek, Manufacturing	-.11 ^r	.12	-.19 ^r	-.01
Money Supply	-.07 ^r	-.27 ^r	.29 ^r	.55
Change in Sensitive Materials Prices	-.04	.08	.10	.02
OVERALL INDEX	-.35^r	-.24^r	-.09^r	.83

^r Revised.

⁺ The net contribution of each component is calculated by multiplying the monthly change in its index by its relative importance.

^{*} Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

Correction

Please note the following correction to Table 2 of the Arizona Leading Index article in the August 1985 *Arizona Business* (page 10). The headings for the second and fourth columns of numbers should be reversed. "Cumulative Change from December 1983 Index" should head the fourth column of numbers, and "Cumulative Change from October 1977 Index" should head the second column of numbers.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Percent Change	
					Value	from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars.....	1st Qtr.	43.948	11.1	10.5	NA	NA
Arizona - 1972 Dollars.....	1st Qtr.	21.010	4.5	7.5	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	2nd Qtr.	190.8	1.6	6.0	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona.....	June	105.2	0.7	1.7	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County.....	May	340,188	- 9	13	1,752,434	8
Pima County.....	May	72,398	0	-27	346,541	- 7
Balance of State.....	May	57,721	-25	-11	275,961	- 4
Arizona.....	May	470,307	-10	1	2,374,936	3
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County.....	May	4,165	- 1	-17	24,187	-11
Pima County.....	May	1,112	- 6	-20	5,995	-23
Balance of State.....	May	1,403	-31	13	7,196	16
Arizona.....	May	6,680	-10	-13	37,416	- 9
HOME SALES						
Maricopa County - Number.....	June	4,889	16	- 2	25,706	- 9
Maricopa County - Median Price	June	74,000	2.8	3.5	72,225	3.1
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona.....	June	3,465.4	16.9	9.6	16,883.4	7.6

NA = Not Applicable.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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Transportation Finance Law, H.B. 2306

Arizona Voters To Decide Revenue/Improvement Level

By voting October 8 on a one-half percent sales tax increase, Maricopa County voters will fulfill the mandate in a crucial provision of House Bill 2306, passed by the Arizona State Legislature May 3 and approved by Governor Bruce Babbitt five days later. This comprehensive, 20-year transportation funding package gives other counties the option of calling similar elections to increase their sales tax for transportation purposes. The law's intent is to allow each county to evaluate and act upon its unique transportation needs.

In Maricopa and Pima counties, voter approval of a sales tax increase to fund freeways and expressways

would also authorize formation of a Regional Public Transportation Authority (RPTA). The RPTA in Maricopa County would develop a plan for rapid transit and, possibly, for a regional bus system. Upon RPTA approval of a plan, another election would be called (no sooner than September 1, 1988) for voters to decide on an additional one-half

percent sales tax increase to fund public transportation. Pima County's RPTA would be responsible for developing a regional bus system as an expansion of Tucson's existing bus system.

A city or town would join the RPTA by passing an ordinance and contributing a percentage of its Local

See "Transportation," page 3

Quarterly Forecast Update

When Will the Growth Recession End?

The awaited and frequently predicted return to solid economic growth has yet to materialize. Already postponed from the second quarter, 1985, when GNP was revised down from a flash estimate of 3.1 percent growth to a mere 2.0 percent advance, recovery from the growth recession has yet to appear in third quarter data. At the time of this writing on August 30, economic results from July are uniformly mediocre. Thus, the base

economic forecast of the Bureau of Business and Economic Research remains unchanged: continued slow, erratic growth.

One major unknown of the last quarterly forecast (July 1985 *Arizona Business*) has been resolved, though not satisfactorily: Congress took action to reduce the federal budget deficit. The Congressional package, however, is widely perceived not as a

See "Forecast," page 6

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ARIZONA BUSINESS

VOLUME 32, NUMBER 8
OCTOBER 1985

TABLE 1
TRANSPORTATION FINANCE LAW, H.B. 2306
SUMMARY OF PROVISIONS

Provision	Description	20-Year Revenue Projections	
Fuel tax monies for Arizona Highway Fund, counties, cities and towns	increases fuel taxes from 13¢/gallon to 16¢/gallon, beginning January 1, 1986. Distributes monies derived from the 3¢ fuel tax increase by the following formula: 1) 64% to the State Highway Fund 2) 14% to Maricopa County, split among the county and cities within the county, on the basis of population 3) 8.5% to Pima County, split among the county and cities within the county, on the basis of population 4) 8% to other counties, based on unincorporated population 5) 5.5% to cities in other counties, based on incorporated population	Total Revenues	\$889.8 million
		1) Highway Fund	\$569.5 million
		2) Maricopa County	\$124.6 million
		3) Pima County	\$ 75.6 million
		4) Other counties	\$ 71.2 million
		5) Cities in other counties	\$ 48.9 million
Distribution of monies to the State Highway Fund	Alternatives 1) If the federal excise tax on small cigarettes is reduced to \$4 per 1,000 (8¢/pack) on or before June 30, 1990, monies from a state tax of 8/20 cent per cigarette (8¢/pack) will be placed in the highway fund, or 2) If the federal excise tax is not reduced as described above, one-half of the state general fund portion of the vehicle license tax is shifted to the highway fund until July 1, 1990, and the fuel tax is increased, beginning July 1, 1990, an additional 1 cent per gallon, with the monies generated from the fuel tax being placed in the highway fund.*	1) \$493.5 million	
		2) \$288 million	
Countywide, voter-approved sales tax increases of up to 1/2% for not more than 20 years	1) Maricopa County A special election will be called between September 10, 1985, and October 31, 1985. The new tax monies may be used for certain controlled-access highway projects. Upon approval of the tax, a Regional Public Transportation Authority (RPTA) is created to develop a plan for rapid transit and possibly a regional bus system. If the RPTA approves a plan, the County Board of Supervisors shall order an election not sooner than September 1, 1988, to approve another 1/2% sales tax increase for public transportation. 2) Pima County Allows the Pima County Board of Supervisors to call a special or general election after September 10, 1985. The new tax monies may be used for certain controlled-access highways, arterial roads or grade separation projects. Upon sales tax approval, an RPTA is formed to operate a regional bus system. 3) Other Counties Allows board of supervisors to call a special or general election after September 10, 1985. Distributes these tax monies to the county and to individual cities and towns within the county as prescribed by the board of supervisors. Monies may be used for street and highway purposes.	1) Maricopa County, subtotal Roads Bus system Public transportation planning (maximum) Additional 1/2% sales tax for public transportation** 2) Pima County, subtotal Roads Bus system 3) Other counties, subtotal	\$5.48 billion 5.31 billion 167.7 million 8 million \$4.79 billion \$1.42 billion 1.34 billion 83.5 million \$1.33 billion
New uses for State Highway Fund monies	1) Permits highway fund monies earmarked for controlled-access highways in Pima County to be used also for certain arterial street and highway projects and for grade separation projects. 2) Allows the use of up to \$5 million in highway fund monies each year for entry roads to state parks and roads within state parks.		
New powers and duties for director of Arizona Department of Transportation	1) Coordinate road building activity generated by state funding 2) Assist counties in developing their regional transportation plans. 3) Annual report to Legislature on expenditure of monies for certain major streets and highways. 4) Maintain controlled-access routes in Maricopa and Pima Counties. 5) Conduct certain program review processes in 5th, 10th and 15th years of new funding program.		

* The vehicle license tax is a tax in lieu of all ad valorem property taxes on motor vehicles. The tax is based on vehicle value, according to ARS 28-1591.

** The \$4.79 billion estimate is for a 14-year period, but no statutory limitation is set regarding the duration of the tax. The county board of supervisors must establish the length of time the tax is to be in effect.

Source: Arizona House Bill 2306; Laws 1985, Chapter 308, First Regular Session.

"Transportation," from page 1
Transportation Assistance Fund (lottery) allocation for public transportation (three-fourths of its LTAF if population is less than 100,000, one-third of its LTAF if population is 100,000 or more). The county, representing the area's unincorporated sections, would also join by passing a resolution stating its intent to participate. Each member municipality would be required to contribute to the RPTA "public transportation fund" an amount from local general fund monies, as determined by the RPTA governing board. In Maricopa County, that governing board would comprise one elected official from, and appointed by, the county and each municipality.

REVENUE IMPACT OF ALL PROVISIONS

In addition to the sales tax provision, H.B. 2306 includes the following key components:

- A 3-cent-per-gallon fuel tax increase, beginning January 1, 1986
- Either (a) a higher state cigarette tax or (b) a 4th-cent fuel tax increase and a shift of vehicle license tax monies from the state general fund to the state highway fund
- Changes in the permitted uses of the state highway fund
- A series of new powers and duties for the director of the Arizona Department of Transportation

Maximum potential impact of the new legislation — \$14.40 billion in revenue over the next 20 years — would be achieved only if all counties approve a one-half percent increase, and the 16-cent federal excise tax on small cigarettes is reduced to 8 cents a pack (allowing the state to levy its own 8-cent-per-pack cigarette tax and to place resulting revenues in the highway fund).¹ Table 1 provides descriptions and 20-year revenue estimates for each of the law's provisions (such long-term projections are subject to significant variation, however).

EVOLUTION OF HOUSE BILL 2306

In 1981, the state legislature iden-

tified a need for transportation facilities and enacted an extensive transportation finance bill. S.B. 1001 shifted state general fund revenue to highway needs, increased tax rates for commercial motor carriers, raised vehicle license tax rates, authorized counties to issue bonds and borrow funds, and created or increased various commercial vehicle registration fees. Recognizing a further need for transportation dollars, the legislature passed S.B. 1100 in 1982, which called for an additional fuel tax of 5 cents per gallon, to be phased in over three years. It was thought that these revenue measures would be sufficient to fund state transportation improvements for many years.

Near the end of 1984, however, state and local transportation officials and business and community leaders sensed that transportation dollars were already falling short of even the immediate needs. Senate researchers found that from fiscal year 1981-82 through 1984-85, state highway user revenues had fallen short of projected levels by nearly \$300 million. Additionally, public hearings and route selection delays had resulted in lack of progress in building major freeways and expressways, especially in major metropolitan areas. This led to calls for transportation funding increases ranging from \$1.4 billion to approximately \$8 billion over the next 10 to 20 years.

Funding Proposals

The first formal funding proposals were submitted by the Outer Loop Financing Task Force and the Phoenix Metropolitan Chamber of Commerce. The former group, comprising Maricopa County supervisors, Valley mayors and a city council member, proposed a plan to complete an Outer Loop Freeway in 10 years; funding would come from \$300 million in county general obligation bonds, a portion of the state highway fund monies dedicated to controlled-access routes in Maricopa County, and Maricopa County capital improvement program funds. This recommendation, adopted in August 1984, carried a total cost of \$482 million in constant 1983 dollars.

In November 1984, the Maricopa County Board of Supervisors endorsed a plan offered by the Phoenix Metropolitan Chamber of Commerce, primarily because the "Chamber Plan" provided funds for a more compre-

hensive freeway/expressway system in the Phoenix metropolitan area over a 20-year period. This was an important development because the plan's funding mechanism, a one-half percent voter-approved sales tax increase to be levied in Maricopa County on the state tax base (excluding food), was to become the key component in several bill drafts, including the final adopted version of H.B. 2306. Another important element of the Chamber Plan was its inclusion of a list and map of routes to be completely constructed by the end of the 20-year period.

Legislative Process

In his January 14, 1985, Opening Message to members of the 37th Legislature, Governor Bruce Babbitt perceived the importance of providing for Arizona's transportation needs, as follows:

"The quadrennial Transportation Needs Study, just delivered to the Legislature, shows a substantial shortfall between future costs and projected revenues.² The situation is particularly critical in the urban areas, where traffic is outstripping the capacity of existing streets. Plans have been developed for major new regional highways which cannot be realized under current revenue projections."

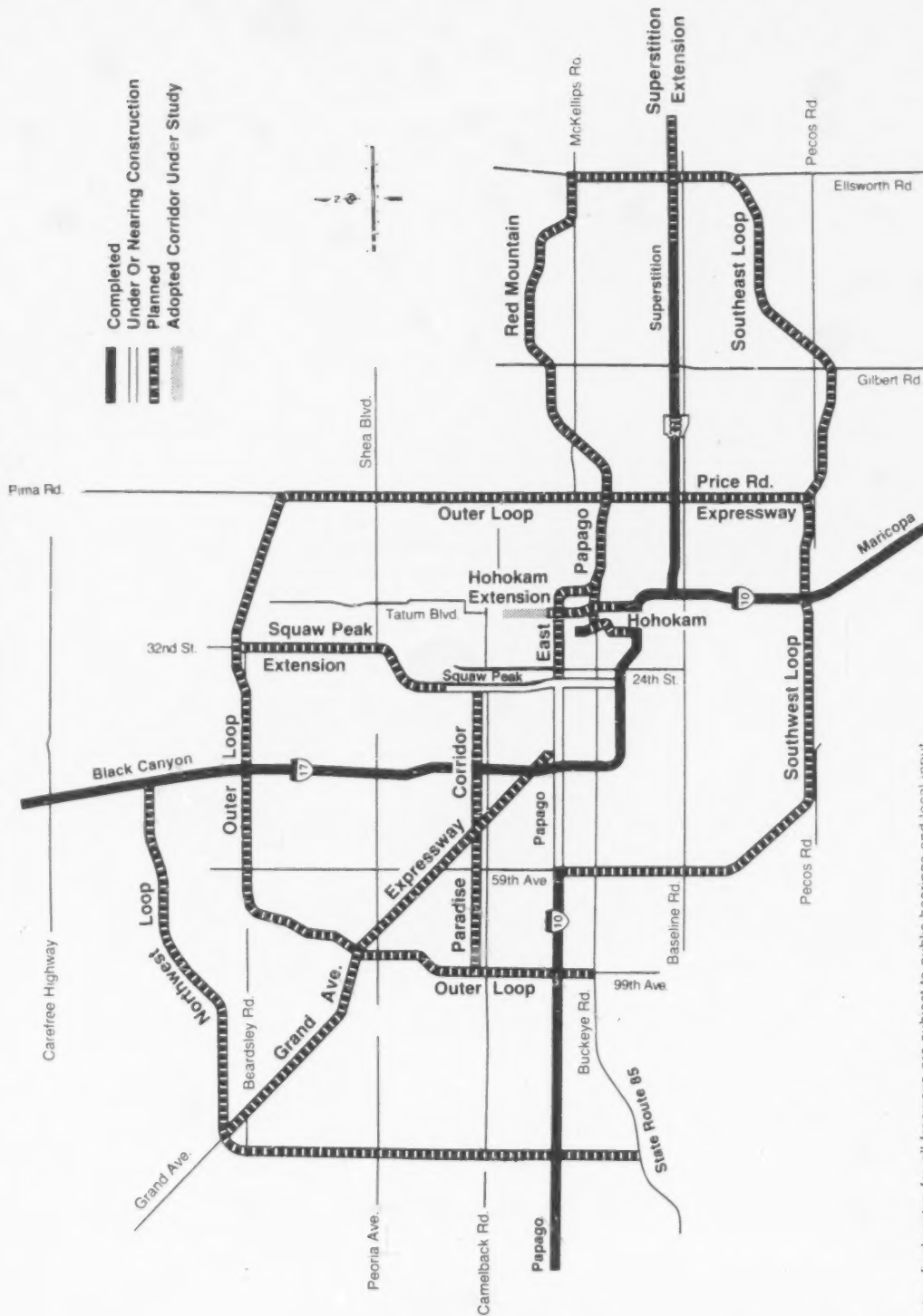
The State Legislature also recognized the importance of addressing the transportation issue. As a forum for proposals and discussion, the Legislature held joint meetings of the Senate and House Transportation Committees on January 17 and 24. Many of the people who addressed the Joint Committee offered support for the Chamber Plan, making it a likely component of the final bill. The Arizona Department of Transportation (ADOT) demonstrated the need for state highway system improvement outside the major metropolitan areas. Their separate funding plan was the first official proposal to contain monies for Pima County and for the state highway system.

Numerous speakers recommended that funds be provided for public transportation. Among these proponents were representatives of the cities of Phoenix and Tucson, the

¹The minimum 20-year revenue projection of \$1.18 billion would result if no county were to approve a countywide sales tax increase, and the federal excise tax on small cigarettes were not reduced by 8 cents a pack.

²Arizona Department of Transportation, *Status and Performance Report for Arizona's Transportation System*, 1985.

FIGURE 1
MARICOPA COUNTY FREEWAY/EXPRESSWAY PLAN*



*The precise, final routes for all freeways are subject to public hearings and local input.

Source: Maricopa Association of Governments (MAG). Transportation Planning Department, plan adopted July 24, 1985

Sierra Club, the Arizona Highway Users Conference and the Committee for the Proposed Monorail Transportation System for the Metropolitan Area of Maricopa County of Arizona. Several other organizations advocated alternative forms of transportation and special transit services. The League of Women Voters recommended funding for a variety of modes: walking, bicycling, rapid transit and light rail. The Arizona Congress for Action, the Alpha-Omega Association and the American Red Cross spoke in favor of funding special transportation for groups such as the elderly, the handicapped, low-income families and needy children.

The Joint Committee meetings were promptly followed by introduction of identical bills in the Senate (S.B. 1178) and House of Representatives (H.B. 2306). These bills incorporated comments made before the Joint Committee, in an effort to begin constructive discussion on transportation finance topics. After H.B. 2306 passed the House (amended), it was amended significantly in the Senate. The result was the emergence of two very distinct versions of the same bill.

When the Senate and House failed to agree on either version, a 14-member Free Joint Conference Committee was formed to reconcile the differences and produce an acceptable piece of legislation. Eventually, the committee decided to combine elements from each version and add provisions to form a new bill. This legislation, in the form of a conference committee report on H.B. 2306, passed both houses of the Legislature on May 3, 1985.

ALLOWED AND ANTICIPATED FUNDING USES

The permitted uses of transportation funding provided by H.B. 2306 vary by jurisdiction and funding source. Given these limitations, anticipated uses of these monies are outlined in the following sections.

Maricopa County Projects

According to the Maricopa Association of Governments' (MAG) Transportation Planning Department, the Maricopa County controlled-access routes to be built with new sales tax revenues over the next 20 years would be at least the following:

- Outer Loop (55 miles; six lanes, except four lanes through the

Indian Reservation) — Extends north from Buckeye Road along 99th Avenue, curves northeast to Beardsley Road, then heads south at Pima Road to the Superstition Freeway.

- East Papago (nine miles; six lanes) — Links the Papago Freeway and the Squaw Peak Parkway on the west with the Outer Loop and the Red Mountain Freeway on the east.
- Superstition Extension (six miles; four lanes) — Extends the Superstition Freeway east to the Maricopa/Pinal County boundary.
- Red Mountain Freeway (17 miles; six lanes) — An east-west route through northern Tempe and Mesa.
- Price Road Expressway (6.5 miles; six lanes) — Extends the eastern leg of the Outer Loop south from the Superstition Freeway to approximately Pecos Road.
- Southeast Loop Freeway (28 miles; six lanes) — Connects the Red Mountain Freeway to the Price Road Expressway and the Southwest Loop.
- Southwest Loop Freeway (22 miles; six lanes) — Runs south from the Papago Freeway along 59th Avenue and curves southeast, then east to join with the Price Road Expressway and the Southeast Loop.
- Hohokam Freeway (four miles; six lanes) — Connects the Maricopa Freeway with the East Papago and improves access to Phoenix Sky Harbor International Airport.
- Squaw Peak Extension (10 miles; six lanes) — Connects the Squaw Peak Parkway and the northern leg of the Outer Loop.
- Paradise Corridor (13 miles; six lanes) — An east-west route connecting the Squaw Peak Parkway and the western leg of the Outer Loop.

These routes are shown on the map in Figure 1. The order in which they would be constructed is still uncertain; MAG will be responsible for establishing priorities.

It is likely that a portion of the sales tax monies also would be used to convert segments of Grand Avenue into an expressway as well as to acquire right-of-way for the Cotton Lane/Northwest Loop Corridor on the far west side of the metropolitan area. In addition, a corridor known as the Hohokam Extension (a two-mile northward extension of the Hohokam Free-

way) is under study by MAG but would not be eligible for funding at the time of the election. In order for a controlled-access project to become eligible for the new sales tax monies, it must be placed on MAG's Regional Transportation Plan and be accepted into the state highway system by the State Transportation Board.

Pima County Projects

If Pima County voters approve a sales tax increase, the types of project eligible for the newly generated monies would include controlled-access highways and grade separations, as allowed in Maricopa County, but they would also include arterial streets and highways. This distinction is important because, with the exception of the Aviation Highway³ controlled-access project, the highest priority of the Pima County region now is expansion of city street and county road systems. This emphasis resulted from the November 1984 voter rejection of a \$15-million bond issue to fund right-of-way acquisition in northern Tucson's Rillito Corridor. Currently, that corridor is destined for some type of alternative to a controlled-access route.

To be eligible for sales tax monies, a controlled-access project must be in the Pima Association of Governments' (PAG) Regional Transportation Plan and on the state highway system. Other types of eligible projects must, at a minimum, be on the PAG plan.

Rural Counties

Counties other than Maricopa and Pima also have the authority to call an election to vote on a sales tax increase up to one-half percent. Each County Board of Supervisors is charged with determining, before the election, the allocation of anticipated sales tax monies between incorporated and unincorporated areas of the county. In this way, voters will have knowledge of where new sales tax monies would be distributed, if approved. These monies may be used for any street or highway purpose.

State Highway Fund, Counties, Cities and Towns

Monies from the 3-cent-per-gallon fuel tax increase will be distributed to the State Highway Fund, counties,

³The Aviation Highway runs from the northwest to the southeast and links I-10 to central and eastern Tucson.

cities and towns (Table 1). New revenue distributed to the highway fund throughout Arizona, with routes determined through the five-year Transportation Facilities Construction Planning process. Recommendations for construction or reconstruction of specific routes are made to the State Transportation Board by an ADOT committee known as the priority planning committee.

The position of ADOT is that several state highways need major development over the next few years to overcome serious deficiencies. With limited additional funding, such as that provided by H.B. 2306, the department has felt that it would recommend the routes listed in Table 2 as the most critical priorities. Additionally, up to \$5 million per year in highway fund monies may be spent for entry roads or roads within state parks.

Another portion of the new fuel tax monies will be distributed to counties, cities and towns and must be expended for the streets and highways prescribed by each. This spending restriction is in line with the current constitutional spending restriction that limits use of certain highway-user revenues to "street and highway" purposes.

CONCLUSION

In his Opening Message to the 37th Legislature, Governor Babbitt stated his opinion that the driving public is

TABLE 2
STATE HIGHWAYS WITH HIGHEST PRIORITY FOR DEVELOPMENT

Route	Location	Estimated Cost (In Millions)
SR-360	Maricopa/Pinal County line to U.S. 60	\$ 16
SR-69	Prescott to Cordes Junction	50
SR-87	McDowell Road to Payson	50
SR-93	Kingman to Detrital	60
SR-85	Junction I-8 to I-10	42
US-93	Bagdad Junction to I-40	37
SR-95	Needles Bridge to Bullhead City	31
SR-260	Payson to Woods Canyon Lake	51
Total		\$337

Source: Arizona Department of Transportation, 1985.

capable and willing to pay for expansion of the transportation system. A survey of Phoenix residents conducted in April 1985 by the Behavior Research Center for the City of Phoenix supported the governor's perception. Sixty-seven percent of the survey respondents said they would be willing to pay additional taxes for more north/south freeways, and 71 percent said they would pay additional taxes for more east/west freeways. Another survey, conducted in August 1985 by Arizona Field Research for *The Arizona Republic/The Phoenix Gazette*, revealed that 69 percent of Maricopa County residents favored a half-cent increase in the

state's sales tax to fund transportation improvements. Another 20 percent opposed the increase, and 11 percent were undecided.

The governor's perceptions and the survey results will be confirmed or rejected October 8 by Maricopa County voters. Elections in several other counties are expected to follow. The people of Arizona will thereby assume the lead role in establishing the level of transportation improvements over the next 20 years.

— Clemenc Ligocki

Mr. Ligocki is Legislative Research Analyst for the Transportation Committee of the Arizona State Senate.

"Forecast," from page 1

means to reduce the deficit, but as a weak measure likely only to keep the deficit from rising further. Thus, response in the financial and stock markets, and generally in the business community, has been minimal.

A huge federal budget deficit, the primary cause of the growth recession, will therefore continue to limit the ability of the economy to grow. The deficit creates such a need for funds that interest rates remain high on an inflation-adjusted basis, and the dollar stays strong in relation to other currencies. A flood of foreign imports and investment results, harming domestic industries.

While both interest rates and the dollar declined during the summer, the drop-off was mild and due only to the weak economy. Since the Federal Reserve cannot directly act on the

root cause of the problem — the budget deficit — they have only partial control over the course of the economy. In contrast to the impact of the Fed's credit loosening last fall, further relaxation in May has yet to have the stimulative effect expected by most analysts. Or, in a pessimistic vein, perhaps the economy would be even weaker if this action had not been taken.

The absence of signs that economic growth will either improve or deteriorate into a recession prior to early 1986 does not imply that the GNP of any given quarter will not decline, nor that it will expand by more than 3 percent. Sharp swings in components of the GNP can occur as long as the economy's severe imbalances — such as the budget and trade deficits — persist. Thus, an apparent improvement or deterioration in the economy, as measured by GNP, should be dis-

counted unless sufficient corroborating evidence is provided.

1985-86 ARIZONA FORECAST

While the Arizona economy has slowed in response to these national conditions, it continues to expand at a rate in excess of its long-term average of 5.5 percent. This slow-growth pattern seems unlikely to persist through 1986, a length of more than two years, but it remains the "control" forecast because those factors that could affect the course of the economy (such as further Congressional or Federal Reserve actions) continue to be indefinite. As long as such actions are not taken, however, it remains difficult to present a convincing case for any other course but ongoing, slower growth.

On the optimistic side, the decline

in interest rates and the dollar is a positive development. These decreases, however, are due primarily to the weak economy. Should they spark economic growth, an increase in both interest rates and the dollar seems likely to follow, limiting any improvement. A chance exists, however, that economic growth might stabilize at a higher level than the current growth recession.

Pessimistically, among the traditional harbingers of a recession, only consumer spending and consumer debt pose a concern. However, non-traditional problems exist, such as the weakness in domestic productive industries, which may eventually lead to a general recession despite the absence of inflation, rising interest rates and high factory utilization.

Four possible economic outlooks for the remainder of 1985 and 1986 are presented below. The quarterly forecasts made in late August by the panel of Robert Eggert's *Blue Chip Financial Forecasts* can be categorized into these four alternatives. They differ from those presented in the last quarterly forecast largely because of Congressional action on the deficit. The possibility of further political actions, such as tax reform, protectionism, and lack of adherence to the deficit package, could significantly alter the likelihood of these scenarios.

Base Forecast: More of the Same

This "control" forecast remains similar to that provided in previous quarterly outlooks, although the rate of growth of most economic indicators has been scaled down (see the Ari-

zona forecast in Table 1 and the Maricopa County forecast in Table 2). A similar forecast for the nation was made by more than one-third of the *Blue Chip* panel.

The forecast of real growth in the Gross State Product (GSP) has been lowered for both 1985 and 1986 (see Figure 1). Earlier forecasts assumed an erratic pattern, in which quarters of more energetic expansion would be realized. Such surges of economic growth now seem unlikely, though some inconsistency should persist. This generally slower growth expectation has also caused a downward revision to personal income predictions for 1985 and 1986, as well as to retail sales estimates for 1986. Retail sales continue to prop up the economy in 1985, in part due to heavy in-migration; however, consumer spending should moderate soon, given factors such as high consumer debt.

Persistent rises in the unemployment rate and slow job formation paint a gloomier employment picture than in previous forecasts. Thus, the predicted unemployment rate for both 1985 and 1986 has been bumped up, though it is expected to stabilize in 1986 as population gains slow. The migration of people to Arizona always lags changes in employment and the general economy. A growing unemployment rate during 1985, to nearly the national average, should be sufficient to retard migration by this winter. With construction employment dipping during the summer, only the services sector and the smaller finance, insurance and real estate sector show

much employment gain.

The inflation rate, measured by the Metropolitan Phoenix Consumer Price Index, remains stable at approximately 6 percent. Although higher than the national rate, due to the demand created by an increasing population and healthy economy, the local inflation rate is not likely to accelerate until the dollar drops sharply (see Figure 1).

While construction so far in 1985 has exceeded expectations, weaknesses are developing, particularly in the number of permits issued for apartment units. Thus, while the construction totals for 1985 have been adjusted upward because of permits issued during the first half of the year, the forecast for the remainder of 1985 and 1986 is largely unchanged. High vacancy rates and the sluggish economy should slow commercial construction in particular. Further, changes in the tax laws – which seem likely – could sharply brake apartment and office construction.

Optimistic Forecast: An End to the Growth Recession

Nearly one-fourth of the *Blue Chip* panel foresee a recovery to 3 percent or more GNP growth during the latter half of 1985, continuing throughout 1986. Panel members made their prediction with knowledge of July's mediocre economic results.

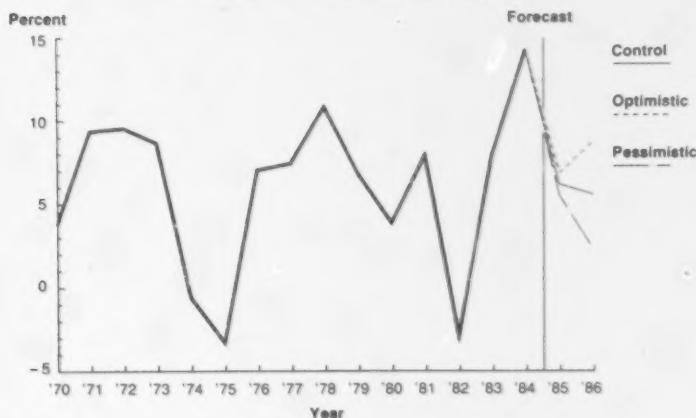
The possible causes of such a recovery remain unclear. This scenario must assume that previous and/or additional actions by the Federal Reserve will soon stimulate the economy. Even if this would occur, it is unlikely that such actions could prop the economy throughout 1986 as well. Thus, the scenario must also assume that continued weakening of the dollar will cause rapid improvement in the trade deficit, prompting greater demand for domestic products.

Although the economy has the capacity to resume more rapid expansion, this scenario seems to be based more on wishful thinking than on economic reality. Its occurrence should benefit all sectors of the Arizona economy (Tables 1 and 2 detail the alternative scenarios for the first time) but should prompt a conventional recession both locally and nationally during 1987.

Pessimistic Forecast: Growth Recession Erodes into Recession

Only 10 percent of the *Blue Chip*

FIGURE 1
ARIZONA GROSS STATE PRODUCT



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 1
1985-86 ECONOMIC FORECAST: ARIZONA

	Actual 1984	Forecast Scenarios					
		Control		Optimistic		Pessimistic	
		1985	1986	1985	1986	1985	1986
Gross State Product							
Millions of 1972 Dollars	20,229	21,475	22,675	21,625	23,525	21,350	21,850
Percent Change	14.3	6.2	5.6	6.9	8.8	5.5	2.3
Personal Income							
Millions of Current Dollars	36,151	39,625	43,350	39,825	45,150	39,450	42,525
Percent Change	13.3	9.6	9.4	10.2	13.4	9.1	7.8
Retail Sales							
Millions of Current Dollars	19,399	21,350	23,175	21,400	24,075	21,250	22,525
Percent Change	11.6	10.0	8.5	10.3	12.5	9.5	6.0
Unemployment Rate							
Percent	5.0	6.5	7.2	6.3	6.4	6.6	8.2
Wage and Salary Employment							
Number in Thousands	1,181	1,255	1,310	1,260	1,350	1,250	1,295
Percent Change	9.6	6.3	4.4	6.7	7.1	5.8	3.6
Population							
Number in Thousands	3,095 ^E	3,210	3,315	3,210	3,335	3,210	3,300
Percent Change	4.2	3.7	3.3	3.7	3.9	3.7	2.8
New Single Family Housing Units Permitted							
Number	30,845	32,950	27,700	34,800	34,500	30,750	20,600
Percent Change	-0.3	6.8	-16.0	12.8	-0.9	-0.3	-33.0
New Multifamily Housing Units Permitted*							
Number	47,539	30,000	13,300	34,700	24,000	26,700	10,700
Percent Change	43.0	-36.9	-55.7	-27.0	-30.8	-43.8	-60.0
Value of Building Permits							
Millions of Current Dollars	5,262	5,250	4,300	5,600	5,300	4,900	3,400
Percent Change	44.0	-0.2	-18.1	6.4	-5.4	-6.9	-30.6

E = Estimated

*Apartment complexes of three or more units

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

panel support the possibility of a recession starting prior to the second half of 1986. If one trusts the leading indicators, which show no sign of a recession, it is difficult to make a case for one prior to next summer. However, the chances of a recession later are much greater.

The rationale behind a recession beginning in mid or late 1986 is that the unbalanced economy cannot last forever. Weakness in the productive industries may eventually cause consumer confidence to decline. Combined with high debt levels, consumer spending slackens. At the same time, the construction industry slumps because of overbuilding. The result is a gradual decline into a relatively mild recession. The impact on Arizona is shown in Tables 1 and 2.

Such an economic downturn should cause interest rates and the dollar to decline, setting the stage for a robust recovery. However, a recession would aggravate the federal budget deficit.

Without further cuts, highly unlikely during a recession or near an election, the massive deficit could cut short the recovery, resulting in a repeat of current economic conditions.

Variation on the Base Forecast: Short Recovery, Another Slowdown

Nearly one-third of the *Blue Chip* panel expect an improvement in economic growth during the second half of 1985. However, they see stronger growth persisting for just two to four quarters, followed by a return to the growth recession. A minority foresee the subsequent slide reaching a recession by third quarter, 1986.

This alternative is much more feasible than the optimistic scenario in that it recognizes the underlying problems that preclude a robust, lengthy recovery. However, it still represents an optimism without basis in fact, which has afflicted a number of forecasters since the first slow quarter of economic growth in 1984.

A detailed forecast for Arizona has not been prepared for this scenario. Conditions should be slightly better than those of the control forecast.

SUMMARY

No end to the growth recession is in sight, raising the possibility of this episode becoming the longest period of slow growth since at least World War II. Having begun during third quarter, 1984, its length has nearly reached the prior record of five quarters, set during 1966-67. With no end to the slow growth period in sight, this economic expansion seems likely this fall to surpass the average peacetime length of 34 months.

In Arizona, the growth recession represents a mixture of good and bad news. On the negative side, slow growth has contributed to the rising unemployment rate. The unevenness of the economy - in contrast to slow growth by all industries - means that some companies are suffering to

TABLE 2
1985-86 ECONOMIC FORECAST: MARICOPA COUNTY

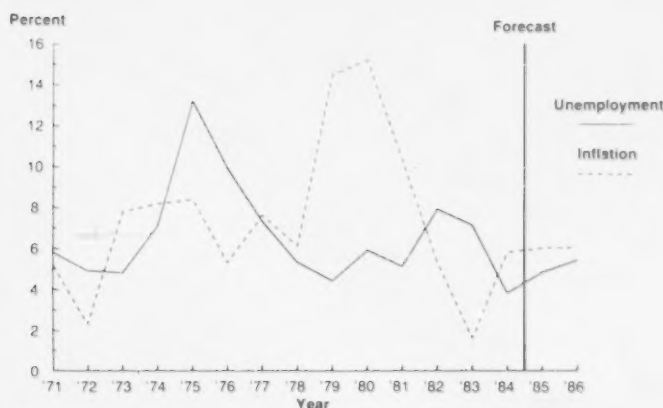
	Actual 1984	Forecast Scenarios					
		Control		Optimistic		Pessimistic	
		1985	1986	1985	1986	1985	1986
Consumer Price Index							
Percent Change	5.8	6.0	6.0	6.0	6.3	6.0	5.7
Retail Sales							
Millions of Current Dollars	12,434	13,725	15,000	13,825	15,675	13,675	14,550
Percent Change	12.6	10.4	9.3	11.2	13.4	10.0	6.4
Unemployment Rate							
Percent	3.8	4.8	5.4	4.6	4.7	5.0	6.8
Wage and Salary Employment							
Number in Thousands	770	825	865	830	895	815	845
Percent Change	11.1	7.1	4.8	7.8	7.8	5.8	3.7
Population							
Number in Thousands	1,740 ^E	1,810	1,875	1,810	1,890	1,810	1,865
Percent Change	4.9	4.0	3.6	4.0	4.4	4.0	3.0
New Single Family Housing Units Permitted							
Number	20,774	21,750	18,000	24,000	24,000	20,000	13,000
Percent Change	-0.9	4.7	-17.5	15.5	0.0	-0.9	-35.0
New Multifamily Housing Units Permitted*							
Number	36,817	22,500	10,000	26,000	18,000	20,000	8,000
Percent Change	53.8	-38.9	-55.6	-29.4	-30.8	-45.7	-60.0
Value of Building Permits							
Millions of Current Dollars	3,811	3,700	3,000	4,225	4,000	3,375	2,300
Percent Change	54.3	-2.9	-18.9	10.9	-5.3	-11.4	-31.9

E = Estimated

* Apartment complexes of three or more units

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE II
UNEMPLOYMENT AND INFLATION RATES
Maricopa County



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

nearly the extent of a true recession.

On the positive side, the moderation should help hold inflation in check. Further, for most individuals, the slowdown has had virtually no effect. They still have jobs and are relatively mobile in changing jobs; their incomes have continued to gain in excess of the inflation rate.

Thus, except for an isolated storm, the economic skies over Arizona remain sunny. However, a massive dark cloud – the federal budget deficit – continues to grow on the horizon.

— Tom R. Rex
Research Manager

A Note on the Forecasts

Most of the economic indicators forecast in Tables 1 and 2 are on an annual average basis. (The exceptions are retail sales and the three series related to building permits – these forecasts represent totals for the year.) An annual average can be misleading. For example, the forecast for the 1985 Arizona unemployment rate is 6.5 percent – less than the latest (July) rate of 6.7 percent. This lower forecast does not imply that the unemployment rate will decline during the remainder of 1985. Rather, the annual average unemployment rate is expected to be only 6.5 percent because the rate was so low early in 1985.

Unfortunately, no better measure exists. If forecasts were made on the basis of year-end values, these might be equally misleading as to the course of events during the year. Thus, the reader is cautioned not to look exclusively at annual numeric forecasts.

Arizona Construction Activity Up Slightly in Second Quarter

At mid-year, the outlook for the remainder of 1985 is a mixture of promise and concern for the Arizona construction industry. The promise is lower interest rates that could further stimulate residential activity. The sluggish economy, however, could affect commercial and industrial activity.

As shown in the accompanying Tables 1-3, total construction activity in Arizona increased slightly during the second quarter, from \$1.4 billion (27,165 permits) in the first quarter to \$1.5 billion (29,983 permits). Maricopa County continued to dominate the construction industry, with 73 percent of the recorded dollar value (\$1.1 billion), followed by Pima County, with 14 percent of the recorded activity (\$203 million). Within the counties, the city of Phoenix reported the greatest dollar value of building permits (see Table 4).

SECTORAL ACTIVITY

Residential

Construction and sales activity in the single family sector are very sensitive to the level of interest rates, which declined throughout the quarter (see Figure 1). For example, interest rates for 30-year, fixed-rate, conventional mortgages declined appreciably,

from a range of 13 to 13.5 percent to 11.5 to 12 percent. However, the level of single family construction activity increased only slightly. In Maricopa County, the number of single family permits rose to 6,332, basically unchanged from the 6,277 permits recorded in the first quarter.

Although this quarterly total is the second highest of the 1980s, the response to lower interest rates was somewhat less than expected. During the first two quarters of 1983, interest rates exhibited a similar pattern, but permit activity increased more than 2,000 housing units. The current response of both homebuyers and homebuilders appears to be one of caution as they try to determine if rates will come down further or at least remain at current levels. Because the improved financial market has come relatively late in the economic cycle, potential homebuyers could be concerned about the economy's future strength and direction. Basically, there appears to be a delayed response to the much improved mortgage market that developed during the second quarter.

Commercial

In line with long-time expectations, the multifamily sector continued its

decline. Multifamily activity in Maricopa County decreased from 8,410 housing units authorized in the first quarter to 5,955 housing units authorized in the second quarter. A similar pattern occurred in Pima County, where multifamily activity moved from 2,087 units in the initial quarter of 1985 to 1,422 units. The decline in activity was expected, due to concerns about overbuilding, signs of increasing vacancies, and an economic slowdown that could affect population growth.

Because most development concerns focus on the metropolitan counties, the non-metropolitan counties are frequently overlooked until the metropolitan markets are satisfied. While multifamily activity declined in the metropolitan counties, it increased in the non-metropolitan counties, from 773 housing units recorded in the first quarter, to 1,163 housing units. Activity was especially evident in the growing areas of Casa Grande (306 units), Sierra Vista (536 units), and Flagstaff (382 units).

The office building sector in Maricopa County established a record level of activity, with the issuance of 128 permits, valued at \$168 million. Construction activity was very strong in Scottsdale (38 permits at \$20 million), Phoenix (55 permits at \$76 million),

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(Second Quarter 1985, First Quarter 1985, and Second Quarter 1984)

	COMMERCIAL									
	SINGLE FAMILY		APARTMENTS ^a		OFFICE BUILDINGS ^b		RETAIL STORES ^c		INDUSTRIAL	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
Maricopa County										
Second Quarter, 1985 . . .	6,332	424,502,020	370	153,852,226	128	167,890,636	258	80,417,322	133	35,206,401
First Quarter, 1985	6,277	408,567,268	438	215,821,238	94	76,507,122	227	62,974,489	151	90,747,607
Second Quarter, 1984 . . .	5,783	383,006,339	487	338,600,771	112	78,626,521	220	54,795,378	134	52,279,204
Pima County										
Second Quarter, 1985 . . .	1,145	71,052,603	32	38,431,650	30	11,068,023	21	4,259,720	11	19,487,420
First Quarter, 1985	1,019	57,912,007	87	50,689,954	26	26,798,312	25	10,785,360	27	8,599,202
Second Quarter, 1984 . . .	1,134	65,622,789	138	60,050,408	26	13,297,945	23	2,832,202	33	11,910,507
Rest of Arizona										
Second Quarter, 1985 . . .	1,924	84,479,812	62	26,817,026	46	3,648,513	94	6,717,111	47	18,490,020
First Quarter, 1985	1,257	59,182,724	34	13,449,337	34	1,918,514	69	9,331,777	35	2,381,128
Second Quarter, 1984 . . .	1,634	75,909,426	44	10,916,989	48	5,114,991	76	8,591,830	37	13,716,414
Arizona Total										
Second Quarter, 1985 . . .	9,401	580,034,435	464	219,100,902	204	182,607,172	373	91,394,153	191	73,183,841
First Quarter, 1985	8,553	525,661,999	559	279,960,529	154	105,223,948	321	83,091,626	213	101,727,937
Second Quarter, 1984 . . .	8,551	524,538,556	669	409,568,168	186	97,039,457	319	66,219,410	204	77,906,125

^a Five or more housing units.

^b Office, bank, medical and professional buildings.

^c Shopping centers and other mercantile buildings.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

and Mesa (13 permits at \$59 million). In Pima County, however, the office building sector declined, from \$27 million to \$11 million in the current quarter. Although activity increased in the non-metropolitan counties, it consisted primarily of small projects valued at approximately \$150,000.

Relative to the first quarter of 1985, the retail sector in Maricopa County continued to expand, from \$63 million to \$80 million, in response to a rapidly growing population. Retail activity declined in Pima County, however, (\$11 million to \$4 million) and in the non-metropolitan counties (\$9 million to \$7 million).

Industrial

Maricopa County tends to dominate Arizona's industrial construction activity. However, in the second quarter, industrial activity decreased sharply in Maricopa County (\$91 million in the first quarter to \$35 million), while increasing in Pima County (\$8.6 million to \$19.5 million) and in the non-metropolitan counties (\$2.3 million to \$18 million). The decline in Maricopa County was expected because many of the first quarter permits were for construction of single, large-scale projects, and this activity level could not be sustained. The permit increase in non-metropolitan counties was led by a single permit in Casa Grande, valued at \$15 million (a printing plant for the Meredith Barrow Co.).

LOOKING AHEAD

Construction activity for 1985 has been similar to the 1984 level. During the first half of 1984, \$2.8 billion in construction permits were recorded, in contrast to the \$2.9 billion through second quarter, 1985. Permitted activity during the last half of 1984 declined slightly, to \$2.4 billion, for a record total of \$5.2 billion.

Similar to the past few years, the commercial sector, especially its multifamily and office building components, led second quarter construction activity in Maricopa County. Evidence is increasing, however, that this market is rapidly becoming satisfied. Declining market demand, combined with a sluggish economy and possible tax law changes, are expected to curtail commercial activity for the remainder of 1985.

The multifamily sector, already declining, is expected to continue downward to slightly lower levels for 1985. Even though the office building sector

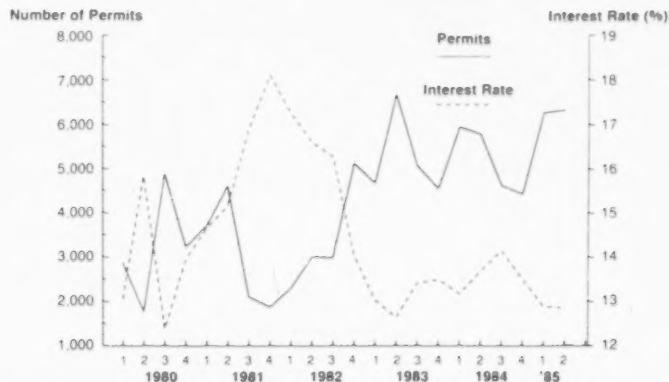
TABLE 2
ARIZONA HOUSING UNITS AUTHORIZED
Second Quarter, 1985

	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	Total
APACHE COUNTY	36	13	0	0	0	49
Percent Change, Previous Year	-5	44	0	0	—	-30
Percent Change, Previous Quarter	24	550	0	0	—	-3
COCHISE COUNTY	92	79	0	0	568	739
Percent Change, Previous Year	-27	-18	—	—	6,211	217
Percent Change, Previous Quarter	21	9	—	—	25	21
COCONINO COUNTY	219	159	12	6	382	778
Percent Change, Previous Year	-20	24	-33	-50	3,719	75
Percent Change, Previous Quarter	85	194	500	—	218	164
GILA COUNTY	121	75	4	4	32	236
Percent Change, Previous Year	-7	13	—	0	—	17
Percent Change, Previous Quarter	188	92	—	0	—	177
GRAHAM COUNTY	18	34	0	0	0	52
Percent Change, Previous Year	19	-8	0	0	0	0
Percent Change, Previous Quarter	28	-20	0	0	0	-8
GREENLEE COUNTY	0	0	0	0	0	0
Percent Change, Previous Year	—	—	0	0	0	—
Percent Change, Previous Quarter	—	—	0	0	0	—
LA PAZ COUNTY	4	38	0	0	0	42
Percent Change, Previous Year	0	-20	—	—	—	-26
Percent Change, Previous Quarter	-42	18	—	—	—	7
MARICOPA COUNTY	6,332	470	166	335	5,955	13,258
Percent Change, Previous Year	9	7	27	-46	-49	-29
Percent Change, Previous Quarter	0	-6	-5	-18	-29	-15
MOHAVE COUNTY	378	407	2	87	35	909
Percent Change, Previous Year	70	5	-50	357	-86	0
Percent Change, Previous Quarter	36	-25	—	262	-61	-3
NAVAJO COUNTY	338	79	0	0	0	417
Percent Change, Previous Year	50	464	—	—	—	75
Percent Change, Previous Quarter	550	23	—	—	—	259
PIMA COUNTY	1,145	580	68	54	1,422	3,269
Percent Change, Previous Year	0	-1	-26	157	-44	-25
Percent Change, Previous Quarter	12	17	-2	169	-31	-11
PINAL COUNTY	127	215	4	30	346	712
Percent Change, Previous Year	53	18	-90	-47	486	75
Percent Change, Previous Quarter	4	-6	-90	400	507	56
SANTA CRUZ COUNTY	28	22	0	0	0	50
Percent Change, Previous Year	3	450	—	—	—	61
Percent Change, Previous Quarter	100	-53	—	—	—	-25
YAVAPAI COUNTY	431	228	26	50	139	874
Percent Change, Previous Year	13	24	0	66	396	34
Percent Change, Previous Quarter	5	-4	29	8	594	19
YUMA COUNTY	132	140	0	68	128	468
Percent Change, Previous Year	-8	-10	—	—	1,179	48
Percent Change, Previous Quarter	34	-40	—	518	966	31
TOTAL ARIZONA	9,401	2,539	282	624	9,007	21,853
Percent Change, Previous Year	9	8	-11	-16	-38	-18
Percent Change, Previous Quarter	9	-2	-9	17	-20	-6

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

FIGURE 1
SINGLE FAMILY PERMITS ISSUED AND
CONVENTIONAL MORTGAGE INTEREST RATES
Maricopa County, 1980-85



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 3
ARIZONA BUILDING PERMITS
Second Quarter, 1985

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value	Number of Permits	Dollar Value
APACHE COUNTY	64	1,692,480	3	12,250	0	0	7	21,358	74	1,726,088
Percent Change, Previous Year	3	33	50	-98	0	0	-22	-78	1	-23
Percent Change, Previous Qtr.	59	24	-25	-75	0	0	16	240	47	22
COCHISE COUNTY	261	6,019,326	20	9,124,933	1	29,624	400	4,949,561	682	20,123,444
Percent Change, Previous Year	-24	-29	-31	23	-50	-80	-7	156	-15	11
Percent Change, Previous Qtr.	4	27	25	-19	-50	-89	45	94	26	6
COCONINO COUNTY	579	15,879,484	37	7,117,744	7	275,600	144	1,277,583	767	24,550,411
Percent Change, Previous Year	3	-6	-21	67	-12	-62	15	3	3	5
Percent Change, Previous Qtr.	164	115	32	18	250	-17	84	-51	134	50
GILA COUNTY	315	6,758,014	17	1,398,617	8	362,853	58	1,576,490	398	10,095,974
Percent Change, Previous Year	0	34	325	1,203	59	33	13	111	5	64
Percent Change, Previous Qtr.	90	126	750	558	100	192	141	935	104	190
GRAHAM COUNTY	111	1,372,648	12	164,385	0	0	30	103,650	153	1,640,683
Percent Change, Previous Year	3	7	-7	21	—	—	100	176	11	2
Percent Change, Previous Qtr.	10	13	139	135	—	—	19	402	15	22
GREENLEE COUNTY	1	2,500	0	0	0	0	0	0	1	2,500
Percent Change, Previous Year	-85	-97	0	0	0	0	—	—	-88	-97
Percent Change, Previous Qtr.	-79	-94	0	0	0	0	0	0	-79	-94
LA PAZ COUNTY	62	922,548	5	143,500	1	29,000	57	608,001	135	1,703,049
Percent Change, Previous Year	-28	-15	0	-65	-79	-86	219	185	14	-12
Percent Change, Previous Qtr.	-3	-20	-28	-77	0	-10	0	65	-2	-21
MARICOPA COUNTY	8,945	448,551,131	913	432,127,253	133	35,206,401	8,029	168,290,351	18,020	1,064,175,136
Percent Change, Previous Year	11	11	-21	-19	0	-32	-4	49	1	-1
Percent Change, Previous Qtr.	2	4	-5	10	-11	-61	11	39	5	4
MOHAVE COUNTY	1,066	17,430,972	165	10,726,661	5	277,255	626	2,258,971	1,862	30,693,859
Percent Change, Previous Year	-3	-2	98	1	66	-36	-11	-20	-2	-3
Percent Change, Previous Qtr.	-6	2	142	31	150	182	8	-12	4	10
NAVAJO COUNTY	575	11,831,780	13	394,838	2	52,045	103	858,746	693	13,137,409
Percent Change, Previous Year	43	32	62	-72	0	108	110	173	50	22
Percent Change, Previous Qtr.	230	363	62	-82	—	—	281	64	231	148
PIMA COUNTY	2,550	83,606,442	103	66,765,002	11	19,487,420	1,938	33,522,258	4,602	203,381,122
Percent Change, Previous Year	0	14	-52	-27	-66	63	-3	-32	-3	-10
Percent Change, Previous Qtr.	10	28	-33	-35	-59	126	12	31	9	0
PINAL COUNTY	462	7,962,654	32	8,458,322	8	15,503,374	243	1,618,714	745	33,543,064
Percent Change, Previous Year	23	59	-11	109	100	38	-18	-79	4	18
Percent Change, Previous Qtr.	0	0	33	412	100	—	4	10	2	198
SANTA CRUZ COUNTY	52	1,484,405	0	0	0	0	5	14,240	57	1,498,645
Percent Change, Previous Year	33	-23	0	0	0	0	-58	-99	11	-67
Percent Change, Previous Qtr.	-24	64	—	—	0	0	-66	-95	-33	9
YAVAPAI COUNTY	863	29,548,045	51	9,696,957	5	648,025	284	2,403,140	1,203	42,296,167
Percent Change, Previous Year	9	24	13	113	150	141	-19	-34	1	31
Percent Change, Previous Qtr.	6	22	10	154	0	48	23	-61	11	22
YUMA COUNTY	390	10,555,998	52	5,621,242	10	1,312,244	139	1,660,452	591	19,149,936
Percent Change, Previous Year	0	-10	159	29	150	348	9	-37	9	0
Percent Change, Previous Qtr.	-11	-2	85	42	-16	44	-10	25	-6	12
TOTAL, ARIZONA	16,296	643,618,427	1,423	551,751,704	191	73,183,841	12,073	219,163,515	29,983	1,487,717,487
Percent Change, Previous Year	7	11	-14	-17	-6	-6	-4	17	1	-1
Percent Change, Previous Qtr.	8	11	4	3	-10	-28	13	33	10	7

*Includes mobile homes.

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

Building Permit Classifications

Residential

New single family houses (includes townhouses)
New duplexes
New mobile homes
New carports and garages
Additions and alterations to all of above residential classifications

Commercial

New apartment buildings of three or more units
New hotels, motels and tourist cabins
New amusement and recreation buildings
New parking garages
New service stations and repair garages
New office, bank and professional buildings (retail)
Additions and alterations to all of above commercial classifications

Industrial

New industrial buildings
Additions and alterations to industrial buildings

Other

Publicly owned housing units
Churches and other religious buildings
Hospitals and other institutional buildings
Public works and utilities buildings*
Schools and other educational buildings*
Other non-residential buildings
Structures other than buildings, e.g., swimming pools, fences, billboards
Additions and alterations to all of above "other" classifications

*Classified as commercial if privately owned

set a record during the second quarter, this level of activity cannot be sustained, given the increasing vacancy rates and announcements of delayed and/or scaled-down projects. The only element of the commercial sector that could remain near the current activity level is the retail sector, due to the existing need for new space in the growing areas of the state. Increasing concern about the strength of the economy and the growth of existing firms probably will result in the industrial sector remaining at levels comparable to those of the second quarter.

Although interest rates declined in the residential sector, the response was not as strong as expected. Since the end of the second quarter, interest rates have increased slightly, and announcements indicate that qualification standards for mortgages will

TABLE 4
REPORTING UNITS WITH
GREATEST TOTAL VALUE OF
BUILDING PERMITS
Second Quarter, 1985

Reporting Unit	Value (in Millions)
Phoenix	\$383.7
Mesa	208.6
Scottsdale	147.7
Tucson	101.5
Unincorporated Pima County	100.3
Chandler	82.6
Unincorporated Maricopa County	82.3
Tempe	63.9
Glendale	51.6
Gilbert	34.3
Unincorporated Yavapai County	25.8
Casa Grande	24.6

Source: Bureau of Business and Economic Research, College of Business, Arizona State University

be raised. Because the Federal Reserve is not expected to further relax credit policy, interest rates should not de-

cline by the end of 1985. The recent decline in interest rates appears to have had the effect of prolonging the residential market, not expanding it.

With the possible exception of the retail sector, no major sector of the construction industry should exceed the levels of the first half, 1985. Hence, construction activity probably will decline in the latter half of 1985 to levels comparable to the record year of 1984. As the metropolitan markets are satisfied, activity could increase slightly in other growing areas of the state. Fundamentally, the remainder of the year should bring good, but unspectacular, levels of construction activity.

— Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate in the College of Business, Arizona State University. He also serves as Director of the Arizona Real Estate Institute.

Arizona Personal Income Surges in '84

Personal income in Arizona rose 13.3 percent during 1984, the third fastest rate among the 50 states, according to the U.S. Bureau of Economic Analysis (BEA). The BEA projects more rapid personal income growth in Arizona than in any other state between 1983 and 2000; the state total should grow 68 percent faster than the national total.

Arizona personal income reached \$36.2 billion in 1984, 1.2 percent of the nation's \$3 trillion personal income total. Earnings, primarily from wages and salaries, accounted for nearly two-thirds of Arizona's total. Dividends, interest and rent produced another 20 percent, and the remainder derived from transfer payments, such as social security

benefits and unemployment insurance (see Figure 1).

Dividing total personal income by population paints an entirely different picture. Instead of rising at nearly the most rapid rate in the nation, per capita personal income has grown at approximately the same rate as the national average in recent years. At \$11,841 in 1984, Arizona per capita personal income remained 7 percent less than the national average, ranking Arizona only 30th among the 50 states. Nothing suggests that per capita personal income growth will accelerate past the national average in coming years.

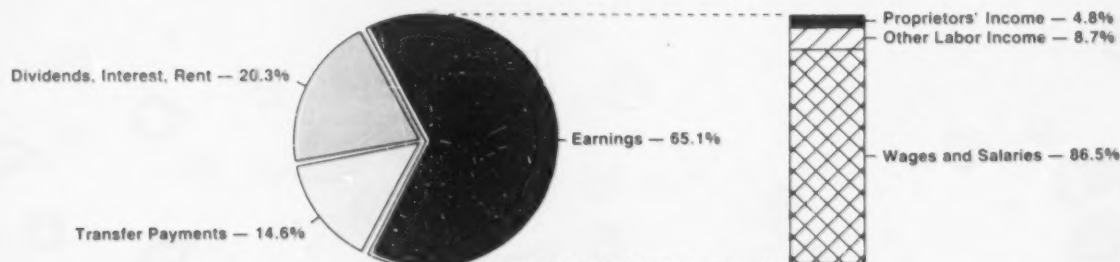
Several factors help to explain Arizona's relatively low per capita personal income:

- It has always been less than the national average.
- The cost of living in Arizona is less than in many states.
- A relatively large proportion of Arizona's jobs are in low-paying industries and occupations, such as clerks in the services industry.
- With strong in-migration of workers, employers do not need to disproportionately raise wages and salaries to attract employees.

Thus, the state's rapid personal income growth is due almost entirely to the fast-growing population. Individuals are not likely to see their incomes rise nearly as quickly.

— Tom R. Rex
Research Manager

FIGURE 1
DERIVATION OF ARIZONA PERSONAL INCOME
1984



Purchasing Indicators Rebound in August

In August, the Arizona economy enjoyed its best overall performance since March. All indicators were positive, for the first time in the last four months. Both new orders received from customers and production picked up speed, and employment registered its largest hike in almost a year.

While the August increases provided an encouraging sign for the balance of 1985, they may have marked an end-of-the-summer, seasonal rebound. Nevertheless, the employment, new order, production and purchase commitment numbers revealed underlying strength in the Arizona economy. The delivery time indicator confirmed that vendor order books grew in August. Also, organizations again were building inventory, which will add further momentum. Prices remained relatively stable — a comforting sign to business decision makers.

While the economic growth rate likely will remain moderate over the balance of the year, all factors indicate that further expansion will occur during the second half and that the probability of an economic downturn is small.

Table 1 presents the results of the August survey of Arizona purchasing managers.

PRICES

Prices paid for major purchased items continued to rise, but at a slightly lower rate than in June and July. The rate also was lower than in the first few months of the year and was

substantially less than that for all but two months of both 1983 and 1984. Although inflationary pressures still are present, Arizona continues to enjoy a year of relatively stable prices, a key factor in moving the expansion well into its third year.

DELIVERY TIME

Delivery time on shipments from vendors recorded its largest stretch-out to date in 1985, and the rate was substantially greater than in any of the previous seven months. Evidently, vendor order books recovered a good bit in August.

INVENTORIES

Inventory levels of purchased materials registered its first gain since April and the second largest increase of the last 12 months (only April's hike was greater). The turnaround in inventory policy resulted from higher levels of business activity. If a steady growth in stock-building now begins, it will have a positive effect on the Arizona economy in months to come.

NEW ORDERS

New orders received by Arizona firms enjoyed the greatest growth since March. The August net increase was approximately three times more than in July.

PRODUCTION

Production also accelerated in August, registering its largest jump

Arizona Purchasing Survey

Now in its 23rd year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity — higher, unchanged, or lower — of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

since May. While the August net production increase still was well under gains recorded in the early part of 1985, it shows the economy has a good deal of vitality and staying power.

EMPLOYMENT

Employment grew at a rate three times greater than in July and the highest in almost 12 months (since September 1984). Thus, the last three-month trend of very moderate employment increases appears to have been reversed, at least for the present.

PURCHASES

Purchases of materials and supplies by Arizona firms advanced at the highest rate since April. The August increase was larger than in all but three months to date in 1985. This buildup of purchases is a reaction to higher new order and production rates and will further stimulate overall economic performance.

— Harold Fearon

Dr. Fearon is chairman of the Department of Purchasing, Transportation, Operations in the ASU College of Business and is the National Association of Purchasing Management Professor.

**TABLE 1
AUGUST PURCHASING SURVEY**

Key Indicators	Percent of Purchasing Managers indicating Each Response (August compared to July)		
	Higher	Same	Lower
Prices paid for major commodities	19	69	12
Delivery time from vendors	24	64	12
Purchased materials inventory level	30	48	22
New orders received	41	41	18
Production	34	48	18
Employment	29	56	15
Purchases	43	35	22

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Leading Index Gains Momentum in July

The Arizona Index of Leading Economic Indicators rose strongly in July for the second consecutive month, following three straight monthly declines during the spring (see Figure 1). The 0.6 percent gain in July, on the heels of a 0.7 percent advance in June, pushed the index to a new high of 105.8 (1977 = 100).

Increases in the index were not as widespread in July as in June: The diffusion index – the percentage of rising components – dropped from 70 percent to 50 percent. The largest gain since late 1982 in the value of residential building permits caused most of the July advance. This surge in residential construction resulted from the lowering of interest rates in late May.

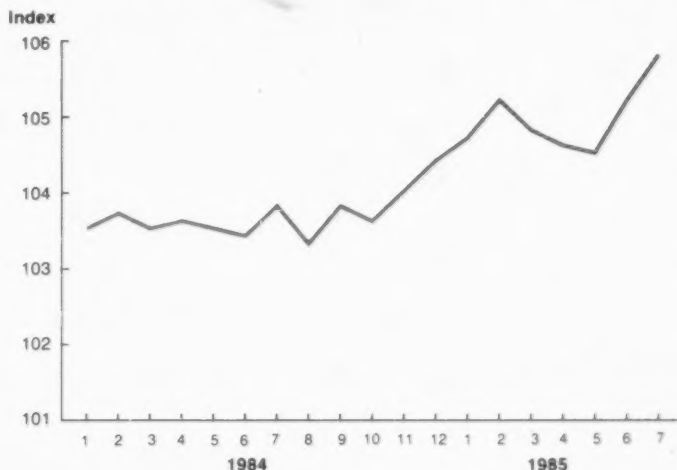
Another sizable gain in the national money supply (M2) – the third in a row – was nearly offset by declines in most of the other components. For most components, the increase or decrease in July only offset the change of the prior month (see Table 1), a continuation of the up-and-down pattern of the last 18 months.

OUTLOOK

Thus, despite another large gain in the July index, the interpretation remains that the Arizona economy is likely to continue its slow, erratic growth. The same scenario applies nationally, with the July leading index rising moderately for the second straight month. However, the gains have not been so large, widespread or lengthy that they signal an improvement from the growth recession. A more detailed outlook is included in the economic forecast article (page 1).

— Tom R. Rex
Research Manager

FIGURE 1
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution*			
	April	May	June	July
Delivery Time*	.04	-.05	.05	-.06
Inventory Levels*	.05	-.15	.10	.03
New Orders*	-.06	-.01	.04	-.04
Production*	.02	-.05	-.01	.01
Employment*	.04	-.02	.02	-.07
Residential Building Permits	-.09	-.02	-.08	.60
Unemployment Insurance Claims	-.17	.01	.15	-.14
Average Workweek, Manufacturing	.12	-.19	-.04 ^f	.06
Money Supply	-.27	.29	.54 ^f	.31
Change in Sensitive Materials Prices	.08	.10	.02	-.05
OVERALL INDEX	-.24	-.05	.79 ^f	.65

^fRevised

* The net contribution of each component is calculated by multiplying the monthly change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Percent Change from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	1st Qtr.	43.948	11.1	10.5	NA	NA
Arizona - 1972 Dollars	1st Qtr.	21.010	4.5	7.5	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	2nd Qtr.	190.8	1.6	6.0	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	July	105.8	0.6	1.9	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	June	366,107	7	-15	2,118,541	2
Pima County	June	59,264	-18	21	405,805	-4
Balance of State	June	63,841	11	5	341,165	-2
Arizona	June	489,212	4	-10	2,865,511	1
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	June	4,847	16	-39	29,034	-18
Pima County	June	962	-13	-23	6,957	-23
Balance of State	June	1,844	31	75	9,125	28
Arizona	June	7,653	14	-26	45,116	-12
HOME SALES						
Maricopa County - Number	July	5,847	20	0	31,553	-8
Maricopa County - Median Price	July	75,000	1.4	3.2	72,725	3.1
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	July	3,921.9	13.2	7.9	20,805.3	7.6

NA = Not Applicable.

Source: Bureau of Business and Economic Research, College of Business, Arizona State University.

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